IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

SOLAS OLED LTD.,	)(	CIVIL ACTION NO. 2:19-CV-152-JRG
PLAINTIFF,	)(	
VS.	)(	
SAMSUNG DISPLAY CO., LTD., SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC.,	)(	MARSHALL, TEXAS MARCH 4, 2021 8:31 A.M. - 6:31 P.M.
DEFENDANTS.	)(	

TRANSCRIPT OF JURY TRIAL

BEFORE THE HONORABLE JUDGE RODNEY GILSTRAP

UNITED STATES CHIEF DISTRICT JUDGE

APPEARANCES:

FOR THE PLAINTIFFS:

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United States District Court
Eastern District of Texas
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(Proceedings recorded by mechanical stenography, transcript produced on a CAT system.)

P R O C E E D I N G S

(Jury out.)

COURT SECURITY OFFICER: All rise.

THE COURT: Be seated, please.

Are the parties prepared to read into the record those items from the list of pre-admitted exhibits used during yesterday's portion of the trial? If so, let's proceed?

MS. HENRY: Good morning, Your Honor.

THE COURT: Good morning.

MS. HENRY: Plaintiff reads into the record -- I'll begin with the PTX numbers. PTX-128_EN, PTX-506, PTX-509, PTX-516, PTX-517, PTX-519, PTX-522, and PTX-522_EN, PTX-529, PTX-534.

THE COURT: Slow down just a little bit, please, Ms. Henry.

MS. HENRY: Yes, Your Honor.

PTX-535, PTX-536, PTX-537, PTX-539, PTX-542, PTX-543, PTX-743, PTX-744, PTX-746, PTX-747, and DTX-1302.

THE COURT: All right. Is there objection to that rendition from the Defendants?

MR. DANIEL CHO: No objection, Your Honor.

THE COURT: Do Defendants have a similar rendition to offer into the record?

MR. DANIEL CHO: Yes, Your Honor. Good morning.

08:32:58 Defendants offer into evidence DTX-461, DTX-464, DTX-468, DTX-469, DTX-749, DTX-1191, and DTX-1586.

08:33:18 THE COURT: Any objection to that rendition by the Plaintiff?

08:33:21 MS. HENRY: No objection, Your Honor.

08:33:22 THE COURT: Okay. Thank you, counsel.

08:33:23 Counsel, is there anything that needs to be raised with the Court before we bring in the jury?

08:33:34 Anything from Plaintiff?

08:33:35 MR. FENSTER: Not from Plaintiff, Your Honor.

08:33:36 THE COURT: From Defendant?

08:33:40 MR. LERNER: Not from Defendants, Your Honor.

08:33:42 THE COURT: Let's bring in the jury, please, Mr. Johnston.

08:34:17 COURT SECURITY OFFICER: All rise.

08:34:19 (Jury in.)

08:34:20 THE COURT: Good morning, ladies and gentlemen. Welcome back. It's good to see you again. Hope you had a good evening. Please have a seat.

08:34:44 All right. We ended the day yesterday with Mr. Kwak. I understand Defendants have two relatively short witnesses to present by deposition; is that correct?

08:34:58 MR. DANIEL CHO: Good morning, Your Honor. Daniel Cho on behalf of Defendants Samsung Display, Samsung Electronics, and Samsung Electronics America.

08:35:09 Defendants call their next witness, Mr. Ciaran
08:35:13 O'Gara, by deposition. For the record, the time counted
08:35:16 against Defendants is 5 minutes 32 seconds. O'Gara
08:35:21 Deposition Exhibit 12 is DTX-327. O'Gara Deposition
08:35:24 Exhibit 13 is DTX-328.
08:35:28 THE COURT: Are there any Plaintiff's
08:35:29 counter-designations, or is this all to Defendant?
08:35:32 MR. DANIEL CHO: No counter-designations,
08:35:34 Your Honor.
08:35:34 THE COURT: All right. Please proceed with this
08:35:38 witness by deposition.
08:35:39 MR. DANIEL CHO: Thank you, Your Honor.
08:35:39 CIARAN O'GARA, DEFENDANTS' WITNESS
08:35:42 PRESENTED BY VIDEO DEPOSITION
08:35:42 (Videoclip played.)
08:35:43 Q. Could you please state your full name and current
08:36:22 address for the record, please?
08:36:24 A. Sure. My full name is Ciaran O'Gara, and my
08:36:30 residential address is Ballynagran, Craughwell, County
08:36:31 Galway, Ireland.
08:36:31 Q. So beginning in October 2016, it's listed here that you
08:36:37 were managing director of Solas OLED Limited; is that
08:36:40 correct?
08:36:40 A. That is correct, yes.
08:36:43 Q. And you currently still hold that title as managing

director of Solas?
A. Correct.
Q. And -- and you testified earlier that currently there are no employees on Solas's direct payroll, correct?
A. That is correct.
Q. When -- okay. So now I understand. So Solas currently has no employees?
A. That is correct.
Q. And do you recognize Exhibit No. 2?
A. Yes, I do.
Q. It's a press release provided by Solas OLED on May 23rd, 2018; is that correct?
A. Yes, that is correct.
Q. Going back to the second paragraph. In the sentence -- second sentence it reads: Solas's scientists continue to file new intellectual property based on their research in the OLED space. Do you see that?
A. Yes.
Q. There has been no patent applications filed by Solas, correct?
A. Not that I'm aware of.
Q. Has Solas ever designed any device?
A. No.
Q. And on the last -- on the same page that we're looking at, the last paragraph of Exhibit No. 2, it reads: Solas

08:38:05 is a leading licensor of technology focused on the OLED
08:38:08 market.
08:38:09 Correct?
08:38:10 A. I can see that here.
08:38:13 Q. But you testified that Solas has not entered into any
08:38:16 licenses for any technology since its conception. That's
08:38:22 correct?
08:38:23 A. That is correct.
08:38:23 Q. And this is being marked as Exhibit No. 13.
08:38:30 Do you recognize this document?
08:38:31 A. I do, yes.
08:38:34 Q. And what is it?
08:38:35 A. These are manufacturing patents.
08:38:37 Q. Is this a list of the OLED manufacturing patents that
08:38:43 were -- that Solas had purchased from Casio and had sold to
08:38:51 Aris through the patent sale agreement which we just looked
08:38:54 at which was Exhibit No. 12?
08:38:59 And if we go to the next page, this is a KPMG
08:39:07 valuation report dated February 5th of 2018, addressed to
08:39:13 the directors of Solas OLED Limited, in relation to 42
08:39:18 manufacturing patents to Aris Technologies, Limited. Is
08:39:23 that an accurate description of this document?
08:39:25 A. Yes. It seems to be, yes.
08:39:30 Q. And it reads under the heading of Background at the
08:39:39 bottom of that page: Solas OLED acquired a total of 725

patents from Casio on the 11th of April 2016. The acquisition price was agreed on a total of $1.5 million.

Correct?

A. That's correct.

Q. And you understand that the OLED manufacturing patents were separated out from the full portfolio and sold to Aris by Solas for $66,000, correct?

A. That's correct.

Q. So you -- you testified that all of the Atlantic IP portfolio companies, including Solas OLED, is currently housed in The Hyde Building, Suite 23, correct?

A. That's correct.

Q. How many rooms are there Suite 23?

A. Office space, there's one open office space, one conference room, a kitchen, and several bathrooms.

Q. Is it fair to say that there's no OLED manufacturing equipment or apparatus at Suite 23 of The Hyde Building?

A. That is correct.

Q. And you don't have any equipment capable of manufacturing or designing any touch sensor device at the Hyde building?

A. That's correct.

Q. Is it fair to say that at Suite 23 of the Hyde building, Solas or any of the Atlantic IP portfolios do not have a research lab?

08:41:21 A. That's correct, yes.
08:41:23 Q. Are you aware of any product or device commercialized
08:41:30 by Casio that practices the asserted '338 and '450 patents?
08:41:37 A. No, I'm not aware.
08:41:43 Q. Are you aware of any device or product commercialized
08:41:46 by Microchip that practices the asserted '311 patent?
08:41:49 A. No, I'm not aware.
08:41:51 (Videoclip ends.)
08:41:55 THE COURT: Does that complete this witness by
08:41:58 deposition?
08:41:58 MR. DANIEL CHO: Yes, Your Honor.
08:41:59 THE COURT: Call your next witness.
08:42:01 MR. DANIEL CHO: Your Honor, Defendants call our
08:42:03 next witness, Mr. Colm O'Riordan by deposition. The time
08:42:07 counted against Defendants is 7 minutes and 58 seconds.
08:42:10 The time counted against Plaintiff Solas is 37 seconds.
08:42:14 And we're ready to proceed, Your Honor.
08:42:16 THE COURT: Please proceed with this witness by
08:42:19 deposition.
08:42:19 COLM O'RIORDAN, DEFENDANTS' WITNESS
08:42:20 PRESENTED BY VIDEO DEPOSITION
08:42:20 (Videoclip played.)
08:42:20 Q. Your full name and address for the record, please?
08:42:24 A. Colm O'Riordan, 156 Castle Farm, Shankill, County
08:42:33 Dublin.

08:42:34 Q. Dr. O'Riordan, I retrieved this webpage from the Solas
08:42:39 OLED website. So you're currently employed for -- by
08:42:42 Atlantic IP Services?
08:42:44 A. That is correct.
08:42:45 Q. Do you still perform work for Solas OLED?
08:42:47 A. I do.
08:42:51 Q. Your position at Solas OLED was the chief technical
08:42:55 officer?
08:42:56 A. That is correct.
08:42:58 Q. Solas ever file a patent application?
08:43:03 A. That contained a specification that we drew up? Not to
08:43:09 my knowledge, no.
08:43:10 Q. Have you ever filed a patent application at all?
08:43:14 A. Not to my knowledge.
08:43:15 Q. Do you have a lab in your offices?
08:43:24 A. I wouldn't say we have a lab, no.
08:43:26 Q. You said, we have a TV, obviously, in the lab. What
08:43:29 were you referring to?
08:43:30 A. So, yeah, let me -- let me clarify that.
08:43:34 So we're currently in a new office. We've just
08:43:37 moved here. That's where I'm taking this deposition from
08:43:39 today.
08:43:39 In the old office, which was in Dublin, we had a
08:43:45 meeting room which Robert and I would refer to as the lab,
08:43:49 where we have carried out some technical work in that

environment. So we've -- we've termed it the lab in that context. So that was the context of my answer.
Q. You understand this is the deposition notice that was served by Samsung Display, Samsung Electronics, and Samsung Electronics America on Solas OLED requesting that Solas provide a witness to testify at deposition on various specific topics?
A. Yes.
Q. And you understand you have been designated by Solas to testify on its behalf with regards to certain ones of those topics?
A. That's correct.
Q. Has Solas ever designed an OLED device?
A. We have not.
Q. Have you -- has Solas ever manufactured an OLED device?
A. We have not.
Q. Has Solas ever designed any display device?
A. We have not.
Q. Has Solas ever manufactured any display device?
A. We have not.
Q. What about selling a display device, has Solas ever done that?
A. No, we have not.
Q. Solas ever designed any touch sensor?
A. No, we have not.

08:45:08 Q. Has Solas ever manufactured any touch sensor device?
08:45:11 A. No, we have not.
08:45:14 Q. Solas ever sold any touch sensor device?
08:45:18 A. No, we have not.
08:45:19 Q. Does Solas have any plans to design a display device in
08:45:24 the future?
08:45:24 A. I don't believe that we have.
08:45:28 Q. What does Solas contend is the invention of the '338
08:45:31 patent?
08:45:31 A. So the '338 patent discloses a means to, I guess,
08:45:43 satisfactorily drive an OLED display while minimizing, you
08:45:53 know, voltage drops and signal delay during that driving of
08:45:58 the OLED element.
08:45:59 Q. The '338 patent describes minimizing voltage drops and
08:46:04 signaling delay through what it calls projecting
08:46:08 interconnections, correct?
08:46:08 A. I believe interconnections play a part in the inventive
08:46:16 aspect of the patent.
08:46:18 Q. What's your understanding of an interconnection in OLED
08:46:25 or LED design?
08:46:27 A. Well, there are a number of ways of interpreting what
08:46:33 an interconnection is.
08:46:34 In the context of the '338 patent, it's a layer of
08:46:42 material that's used to deliver electrical signal to an
08:46:48 element of the pixel circuit.

08:46:52 Q. The '450 patent wasn't the first patent to disclose an
08:46:55 OLED device, correct?
08:46:56 A. I don't believe it was the first patent to disclose an
08:47:02 OLED device.
08:47:03 Q. And does Solas have any knowledge regarding the
08:47:12 research and development that went into the invention of
08:47:14 the '338 patent?
08:47:14 A. We do not, no.
08:47:18 Q. And no one at Solas has any personal knowledge
08:47:22 regarding the research and development that went into the
08:47:25 invention of the '450 patent?
08:47:27 A. I believe that is correct, yes.
08:47:31 Q. And as we just looked at in Topic 7, you've been
08:47:35 designated to testify as Solas's representative on the
08:47:38 priority date it's asserting for each of the patents in
08:47:41 this case?
08:47:41 A. That's correct. So I believe this document was dated
08:47:45 the 17th of May. I don't believe, you know -- I believe
08:47:49 that's correct as of that date.
08:47:50 Q. As of today, the 18th, what's the priority date Solas
08:47:53 is asserting for the '311 patent?
08:47:54 A. I believe the date as written in this document still
08:47:58 applies.
08:47:59 Q. So Solas has never manufactured or sold a device that
08:48:02 practices the '311 patent?

08:48:03 A. That is correct.
08:48:04 Q. Solas never manufactured or sold a device that
08:48:12 practices the '338 patent?
08:48:12 A. That is correct.
08:48:13 Q. And Solas has never manufactured or sold a device that
08:48:17 practices the -- the '450 patent?
08:48:19 A. That is correct.
08:48:21 Q. Does Solas believe that Casio has ever manufactured a
08:48:26 device that practiced the '450 patent?
08:48:27 A. Solas does not have any knowledge that Casio practiced
08:48:34 any products -- produced any products that practiced the --
08:48:41 I think it was the '338 patent you mentioned.
08:48:44 Q. It was the '450 patent.
08:48:46 A. Right.
08:48:47 Q. So I can ask, is Solas aware of any Casio products that
08:48:51 practiced the invention of the '450 patent?
08:48:53 A. No.
08:48:56 Q. Does Solas contend that Casio ever manufactured or sold
08:49:00 any products that practiced the invention of the '338
08:49:03 patent?
08:49:03 A. We are not aware, no.
08:49:06 Q. What about the '311 patent, does Solas contend that
08:49:11 Atmel ever manufactured or sold a device that practiced the
08:49:14 '311 patent?
08:49:14 A. Again, at this moment in time, we -- we are not aware.

08:49:22 Solas is not aware of any product that Atmel produced that
08:49:26 practiced the '311 patent.
08:49:29 Q. Before the lawsuit was filed, had Solas ever informed
08:49:35 any of the Samsung entities that Solas believed they
08:49:39 infringed the '311 patent?
08:49:39 A. I -- I'm not aware of any communications of that
08:49:46 nature.
08:49:46 Q. What about the '338 patent, had Solas ever communicated
08:49:50 to any of the Samsung entities that it believed any of them
08:49:55 infringed the '338 patent?
08:49:56 A. Again, I'm not aware of any -- of any communications of
08:50:02 that -- of that sort.
08:50:03 Q. But is Solas aware -- did Solas ever notify any of the
08:50:07 Samsung entities that Solas believed they were infringing
08:50:10 the '450 patent prior to the filing of this lawsuit?
08:50:12 A. I'm not aware of any communications of that type.
08:50:21 Q. And you've reviewed the prior art cited by the examiner
08:50:24 for the '311 patent?
08:50:25 A. I have not, no.
08:50:29 Q. You haven't looked at any of the prior art references,
08:50:32 right?
08:50:32 A. I have not.
08:50:32 Q. Has anyone at Solas looked at any of the prior art
08:50:37 references?
08:50:37 A. Not apart from attorneys.

08:50:41 (Videoclip ends.)

08:50:43 THE COURT: Does that complete this witness by
08:50:46 deposition?

08:50:48 MR. FRISCH: Yes, Your Honor.

08:50:51 Defendants call the next witness -- Defendants
08:50:59 call our next witness, Adam Fontecchio.

08:51:00 THE COURT: All right. Dr. Fontecchio, if you'll
08:51:02 come forward and be sworn by our courtroom deputy.

08:51:07 (Witness sworn.)

08:51:22 THE COURT: Please come around, sir, have a seat
08:51:24 at the witness stand.

08:51:29 MR. AUSTIN: Your Honor, may I approach?

08:51:30 THE COURT: You may approach.

08:51:54 Let me ask you, Mr. Frisch, is one of these for
08:51:59 the witness or all of them for the Court?

08:52:02 MR. FRISCH: I believe they're all for the Court,
08:52:03 Your Honor.

08:52:03 THE COURT: All right. Thank you. You may
08:52:06 proceed with your direct examination.

08:52:08 MR. FRISCH: Good morning, Your Honor. Good
08:52:09 morning, ladies and gentlemen of the jury. My name is
08:52:13 Jared Frisch, and I have the pleasure of representing the
08:52:16 Defendants.

08:52:16 ADAM FONTECCHIO, DEFENDANTS' WITNESS, SWORN

08:52:16 DIRECT EXAMINATION

08:52:17 BY MR. FRISCH:
08:52:17 Q. Dr. Fontecchio, can you please introduce yourself to
08:52:21 the jury?
08:52:21 A. Good morning. My name is Adam Fontecchio. I'm a
08:52:23 professor of electrical and computer engineering at Drexel
08:52:27 University. I've earned the rank of full professor there.
08:52:27 I've been there almost 19 years.
08:52:30 I live in Pennsylvania, and I have two teenage
08:52:34 daughters, not yet in college. That's coming soon. Been
08:52:37 married about -- almost 20 years, 20 years this year.
08:52:41 And we have quite the little zoo at home. My
08:52:44 daughters are into animal rescue, so we have four cats and
08:52:49 a dog and probably more by the time I get home.
08:52:51 Q. And in addition to your teaching, do you carry out
08:52:56 research as part of your daily functions?
08:52:58 A. I do, yes. I'm responsible for teaching courses in
08:53:01 circuit design and our freshman and senior design courses,
08:53:05 advanced courses, in optics and photonics and electronic
08:53:09 circuits.
08:53:10 I also do research in two areas. One of them is
08:53:13 in STEM education. I actually direct our center for STEM
08:53:19 education, where we try and put in place and research best
08:53:20 practices. Excuse me.
08:53:22 I also run my own research laboratory focused on
08:53:27 nanophotonics, where we understand how light interacts with

materials.
Q. Does any of your research relate to display technologies?
A. It does, yes. I've worked on a number of technologies over the years. One of my most recent projects, we're working on integrating electroluminescent materials, like we've been talking about in the OLED displays, into fibers, which we actually are working to weave into clothing so that you could have a display in the sleeve of your jacket or your coat.
Q. Can you explain a little bit more about how that would work?
A. Sure. So what we've been doing is something called electro-spinning. We've been taking these same materials that we've been talking about for displays, phosphorus-based materials, and we've been actually extruding them into long fibers, which we can then weave into a pattern that creates a matrix in your sleeve.
And so we've been working through it such that it would then be a fully flexible, fully wearable type of display.
Q. And in addition to your research, do you do any work with industry?
A. I do. I've worked with a number of industries over the years, Lockheed Martin, Boeing, L3 Communications right

here in Dallas.
Q. Can you tell the jury a little bit about your work with L3?
A. Yes, for L3, I was working with their division that makes goggles for soldiers. When soldiers are in the battlefield, they need their eyes protected, and so they wear goggles that protect them from shrapnel.

We were working to integrate filters so that it would also block laser light. There's a lot of laser targeting systems in the battlefield, and we work with them so that soldiers would be protected from the laser light but also not have their vision impaired while they were normally on the battlefield.
Q. Does that work in any way relate to displays?
A. It does. We use similar display technology to do the laser blocking as what we've been talking about here.

We've been using color filtration systems, so red, green, and blue. We would make specific colors that would block the laser wavelengths used in battlefields.
Q. And if we take a step back, can you briefly explain your education?
A. Sure. I went to Brown University. I did my undergraduate degree there in physics, I did a Master's degree in physics, and a Ph.D. in physics working in an electrical engineering laboratory.

08:55:47 Q. Did you do any research as part of your Ph.D. program?
08:55:50 A. I did. For my master's degree, I did research
08:55:52 designing an imaging system that flew in a satellite. It
08:55:55 was designed to measure and map the universe. And I
08:55:58 actually built part of the detection system. And I lived
08:56:01 right here in Palestine, Texas, for three months at the
08:56:05 Balloon Facility testing that system out.
08:56:07 For my Ph.D. portion of my work, I studied the
08:56:11 interaction of materials and liquid crystals at -- in
08:56:15 reflective displays.
08:56:17 Q. Have you been awarded any grants to support your
08:56:19 research?
08:56:20 A. I have, yes. I've received grants from a number of
08:56:25 places, industry, philanthropy, the federal government.
08:56:29 I've had grants from the Department of Defense, from the
08:56:33 Department of Energy, NASA, the U.S. Army CERDEC, which is
08:56:36 their research laboratory.
08:56:37 Q. What were you awarded a grant for from CERDEC?
08:56:40 A. So for CERDEC, we were developing a device, once again,
08:56:44 for the battlefield. We developed a device that allowed
08:56:47 soldiers to see through walls. It was about a
08:56:51 briefcase-sized unit that they could carry into the
08:56:53 battlefield. And when they were going in a building to
08:56:56 clear the room, they could hold it up to the wall and see
08:56:59 if there was anybody on the other side. So that before

they went in the room, they knew what they needed to be prepared for.

Q. Have you published any papers related to display technologies?

A. I have, yes.

Q. About how many?

A. Probably about half my work has been related to display technologies, so maybe 50 or 60 publications.

Q. Have you consulted for other litigations related to display technologies?

A. I have, yes.

Q. Are you being compensated for your time here today?

A. I am, yes.

Q. What is the rate at which you're being compensated?

A. I have a standard rate of $500 per hour.

Q. Is your compensation dependent on the outcome of the case or on the opinions and testimony that you're providing today?

A. It is not. Just for my time.

Q. Are the opinions and testimony that you're providing today your own?

A. They are.

MR. FRISCH: Your Honor, we tender Dr. Fontecchio as an expert in Organic Light-Emitting Devices and display technologies.

08:57:51 THE COURT: Is there objection?
08:57:53 MR. FENSTER: No objection.
08:57:53 THE COURT: Without objection, the Court will
08:57:55 recognize this witness as an expert in those designated
08:57:59 fields.
08:57:59 Please continue, counsel.
08:58:01 Q. (By Mr. Frisch) Dr. Fontecchio, what were you asked to
08:58:03 do in this case?
08:58:04 A. I was asked to analyze the '338 patent and the '450
08:58:07 patent. For the '338 patent, I was asked to analyze
08:58:09 whether the accused products from Samsung infringe on it.
08:58:12 For the '450 patent, I was asked, once again, to study
08:58:16 whether the accused products infringe and also whether the
08:58:19 patent was valid.
08:58:20 THE COURT: Dr. Fontecchio, would you slow down
08:58:23 just a little bit?
08:58:24 THE WITNESS: I'm sorry, Your Honor.
08:58:25 THE COURT: Not a big problem, but we've got a
08:58:28 long day to go. So if you would slow down a little bit,
08:58:31 I'd appreciate it.
08:58:32 THE WITNESS: Yes, sir.
08:58:33 THE COURT: Go ahead, counsel.
08:58:33 MR. FRISCH: Thank you, Your Honor.
08:58:34 Q. (By Mr. Frisch) Which claims are you providing
08:58:36 opinions on today with respect to the '338 patent?

08:58:38 A. For the '338 patent, it's Claims 5 and 9.
08:58:42 Q. And which claims are you providing opinions on today
08:58:44 with respect to the '450 patent?
08:58:45 A. Claims 4 and 5.
08:58:47 Q. In rendering the opinions that you're going to be
08:58:51 providing today, what materials did you consider?
08:58:53 A. I considered the patents themselves, the patent file
08:59:00 histories, the expert reports in the case, the products
08:59:03 themselves, the blueprint and design files for the
08:59:10 products, other patents, and some of the patent portfolios
08:59:12 in this case.
08:59:13 Q. About how many documents have you looked at in this
08:59:16 case?
08:59:16 A. Too many to count.
08:59:21 Q. What conclusions did you reach as to whether Claims 5
08:59:25 and 9 of the '338 patent are infringed by any accused
08:59:29 product?
08:59:29 A. They do not infringe.
08:59:30 Q. What conclusions did you reach as to whether Claims 4
08:59:34 and 5 of the '450 patent are infringed by any accused
08:59:38 product?
08:59:38 A. They do not infringe.
08:59:39 Q. Did you analyze whether Claims 4 and 5 of the '450
08:59:44 patent are anticipated in light of the prior art?
08:59:47 A. I did.

08:59:47 Q. And what conclusion did you reach?
08:59:49 A. I found that they are anticipated.
08:59:51 Q. Did you analyze whether Claims 4 and 5 are rendered
08:59:56 obvious in light of the prior art?
08:59:57 A. I did.
08:59:58 Q. And what conclusion did you reach?
08:59:59 A. That they are obvious.
09:00:02 MR. FRISCH: Mr. Beall, can you please bring up
09:00:05 DDX-6.003?
09:00:09 Q. (By Mr. Frisch) Now, Dr. Fontecchio, have you prepared
09:00:10 a set of slides to help walk the jury through your opinions
09:00:13 today?
09:00:14 A. I have, yes.
09:00:14 Q. And what are you showing in this particular slide?
09:00:17 A. So we're going to talk about the '338 patent. This is
09:00:20 Claims 5 and 9, which are the accused claims.
09:00:23 Q. What type of claims are Claims 5 and 9?
09:00:26 A. Claims 5 and 9 are dependent claims, so they depend on
09:00:29 the claims of Claim 1, as well.
09:00:32 Q. So is that why you have limitations here for both
09:00:36 Claims 1 and then each of Claims 5 and 9?
09:00:39 A. I do, yes. So Claims 5 and 9 need to include all the
09:00:42 limitations from Claim 1, as well.
09:00:44 Q. Can you explain, at a high level what the '338 patent
09:00:47 describes as its alleged invention?

09:00:50 A. Yes. At a high level, it invents -- it claims to
09:00:55 invent interconnections which connect to the pixels, and
09:00:58 these are coupled with the three-transistor circuit.
09:01:01 Q. What is the purpose of that claimed interconnection?
09:01:05 A. So the purpose of the interconnections is to improve
09:01:09 the flow of signal from the data lines into the pixels.
09:01:14 It's kind of like if you are driving on a highway,
09:01:17 that's kind of like a signal line. It has multiple lanes,
09:01:21 and if you go to get off at your off-ramp, that's like a
09:01:26 connection to the pixel.
09:01:26 It can be limited if there's a slow driver and
09:01:29 there's only one lane, so the '338 patent increases the
09:01:32 sizes of the interconnections which would be like adding
09:01:35 lanes to the off-ramp so that more signal can get off into
09:01:40 the pixels easier.
09:01:41 MR. FRISCH: Your Honor, I'm about to ask
09:01:42 questions that get into the confidential information, so
09:01:45 I'd request that the courtroom be sealed.
09:01:47 THE COURT: Based on counsel's request and to
09:01:50 protect confidential and proprietary information of the
09:01:53 parties, I'll order the courtroom sealed at this time.
09:01:56 I'll direct that all persons present who are not
09:01:58 subject to the protective order that's been entered in this
09:02:00 case should excuse themselves and remain outside the
09:02:03 courtroom until the courtroom is reopened and unsealed.

09:02:13 (Courtroom sealed.)
09:02:13 (This portion of the transcript is sealed
09:02:13 and filed under separate cover as
09:02:14 Sealed Portion No. 13.)
09:37:52 (Courtroom unsealed.)
09:37:53 THE COURT: All right. The courtroom is unsealed.
09:38:04 You may proceed.
09:38:06 MR. FRISCH: Thank you, Your Honor.
09:38:07 Q. (By Mr. Frisch) Dr. Fontecchio, have you also been
09:38:08 asked to consider the validity of Claims 4 and 5 of the
09:38:13 '450 patent?
09:38:13 A. I have, yes.
09:38:15 Q. Did you consider whether Claims 4 and 5 are anticipated
09:38:21 by the prior art?
09:38:21 A. I did consider that, yes.
09:38:23 Q. And what was your conclusion?
09:38:25 A. I found that they are anticipated.
09:38:27 Q. And did you look at any particular prior art for that
09:38:31 conclusion?
09:38:31 A. I did. A patent by Utsugi.
09:38:33 Q. And did you consider whether the claims were obvious in
09:38:37 view of Utsugi?
09:38:38 A. I did, and I found that they are obvious.
09:38:41 Q. As part of your analysis, did you form an opinion about
09:38:45 the proper definition of a person of ordinary skill in the

art for the '450 patent?
A. I did, yes.
Q. And what, in your opinion, is the proper definition of a person of ordinary skill in the art for this particular patent?
A. So as of November 1996, a person of ordinary skill in the art would be someone with a technical degree in electrical engineering or computer engineering or material science or physics or the like, something similar. And they would also have experience in active matrix display design and electroluminescence.
Q. Now, in your understanding, has Mr. Credelle provided a different set of qualifications for a person of ordinary skill in the art?
A. He has, yes.
Q. If you were to apply Mr. Credelle's definition of a person of ordinary skill in the art, would that change any of your opinions?
A. It would not.
MR. FRISCH: Mr. Beall, will you please put up DTX-110?
Q. (By Mr. Frisch) Dr. Fontecchio, do you recognize DTX-110?
A. I do. This is the Utsugi patent.
Q. What is the title of the Utsugi patent?

09:39:56 A. Current-controlled luminous element array and method
09:40:02 for producing the same.
09:40:03 Q. And in your understanding, at a high level, what is the
09:40:06 invention of the Utsugi patent?
09:40:08 A. It's a specific type of current-controlled display and
09:40:11 a method for producing it.
09:40:12 Q. And who was the Utsugi patent assigned to?
09:40:16 A. It was the NEC Corporation in Japan.
09:40:20 Q. And are you familiar with the NEC Corporation?
09:40:23 A. I am. They're a large display manufacturer.
09:40:25 Q. And do they manufacture products that are commercially
09:40:27 sold?
09:40:27 A. They do, yes.
09:40:28 Q. And what is your understanding as to why the Utsugi
09:40:31 reference is prior art to the '450 patent?
09:40:33 A. It was filed and issued prior to the '450 patent being
09:40:41 filed.
09:40:41 Q. Was the Utsugi reference considered by the Patent
09:40:44 Office during the original prosecution of the '450 patent?
09:40:46 A. It was not.
09:40:48 Q. And how do you know that?
09:40:50 A. I've examined the file history, and in the file history
09:40:54 of the patent -- of the '450 patent, it explains everything
09:40:59 that was looked at by the Patent Office, and Utsugi does
09:41:01 not appear there.

09:41:01 Q. Now, in performing your analysis, what was your
09:41:07 understanding for the standard of anticipation?
09:41:09 A. My understanding of anticipation is that every claim
09:41:13 limitation is met in the prior art.
09:41:14 Q. And, in your opinion, does Utsugi disclose every
09:41:19 limitation of Claims 4 and 5 of the '450 patent?
09:41:21 A. Yes, it does.
09:41:22 Q. Now, in rendering your opinions, were there particular
09:41:25 portions of Utsugi that you focused on?
09:41:28 A. There were, primarily Column 7 and 8 and Figures 4
09:41:34 and 5.
09:41:34 Q. And why is it that you focused on Columns 7 and 8?
09:41:38 A. 7 and 8 describe the manufacturing process, and it
09:41:41 walks through the steps of making pixel circuits.
09:41:45 MR. FRISCH: Mr. Beall, can you please put up
09:41:48 Figures 4 and 5 side-by-side?
09:41:51 Q. (By Mr. Frisch) Dr. Fontecchio, can you explain what
09:41:52 Utsugi is showing in Figure 4?
09:41:55 A. Yes. Figure 4 is a top-down view of a pixel circuit.
09:42:01 So this is a pixel schematic, similar to what we were
09:42:06 looking at before, the blueprint files, the GDS files.
09:42:12 This is a drawing, of course, but it lays out a top-down
09:42:14 view of what the pixel looks like.
09:42:17 Q. And what does it show in Figure 5 of Utsugi?
09:42:19 A. Figure 5 is a cross-section. So if you take Figure 4,

09:42:23 you can see there's a Line A that goes across it, pointer,
09:42:28 this line.
09:42:29 If you were to take a slice, like cutting through
09:42:32 a layer cake, and then you look at the slice of cake that
09:42:35 you have, that's what you see on the right in Figure 5.
09:42:39 They call it a cross-section analysis.
09:42:41 Q. And how are the layers that you see in Figure 5 formed?
09:42:44 A. They are formed through micro-manufacturing techniques.
09:42:49 You put down layers, and you process them. You can add
09:42:53 material, you can remove material, and build it out.
09:42:55 Q. And is it built in a particular direction?
09:43:00 A. It's built from the bottom up.
09:43:02 Q. Have you prepared slides to help walk the jury through
09:43:06 your particular opinions with respect to Utsugi?
09:43:08 A. I have, yes.
09:43:15 Q. Dr. Fontecchio, what are you showing on this slide?
09:43:18 A. So these are the claim limitations for Claim 4.
09:43:22 Claim 4 is dependent upon Claim 1, so I also have the
09:43:25 limitations for Claim 1.
09:43:27 So this is what needs to be demonstrated, all of
09:43:30 these limitations exist within Utsugi, for Utsugi to
09:43:33 anticipate the '450, Claim 4.
09:43:41 Q. And --
09:43:43 A. Oh, I'm sorry.
09:43:43 Q. In particular, why have you highlighted the first three

09:43:46 elements?
09:43:46 A. So I'm going to walk through each of these limitations
09:43:49 and show you where they exist within Utsugi.
09:43:51 And the first 1, [1a], and [1b] are bold because
09:43:55 that's where I'm going to start.
09:43:57 Q. Now, can you explain your analysis to the jury?
09:43:59 A. I can. So in the upper left-hand corner, you'll see a
09:44:03 box, and this is the claim limitation that I'm talking
09:44:08 about. So that's from the claim from '450, what I just
09:44:11 showed you on the previous page.
09:44:13 I then have some text from Utsugi in a box and a
09:44:17 figure on the right from Utsugi. And I'm going to show you
09:44:21 where all of the elements from the claim appear within
09:44:25 Utsugi.
09:44:25 So let me start with a display apparatus. We know
09:44:30 that it's a display because it says it's a display. And it
09:44:34 starts with a substrate.
09:44:36 And in this case, a substrate is the bottom layer
09:44:39 that we're going to build our circuit on. It's highlighted
09:44:41 in yellow. It's a 50 glass -- No. 50, the glass base. And
09:44:46 also in yellow is the text in DTX-110 that shows you glass
09:44:51 base 50. And so we have our substrate that's required.
09:44:55 Next up is the active elements, in blue. And the
09:44:59 active elements are formed over the substrate.
09:45:01 In the text, it describes the active elements as

09:45:04 switching transistor Q_s and current-controlling transistor
09:45:11 Q_I. Transistors are active elements.
09:45:16 And over here on the right, in blue, in this
09:45:19 cross-section, we can see where they have built Q_i, which is
09:45:23 one of the transistors.
09:45:24 We can also see that the active elements are
09:45:27 required to be performed over the substrate, and you can
09:45:29 see here that the transistor is formed over the substrate.
09:45:36 Q. And does Claim -- or excuse me. Does Figure 5 show
09:45:41 both of the transistors, Q_s and Q_i, that you discussed?
09:45:45 A. It does not. There's a second transistor Q_s, it's just
09:45:48 not shown here.
09:45:48 Q. Can you explain why it's not shown in this particular
09:45:51 figure, Figure 5?
09:45:52 A. When they were doing -- designed the patent, they just
09:45:54 happened to pick a cross-section that shows one of the
09:45:57 transistors, not both of them.
09:45:58 Q. And, Dr. Fontecchio, what's the next aspect of the
09:46:00 claim that you looked at?
09:46:01 A. The next aspect is that the active elements are driven
09:46:06 by externally supplied signal. So the active elements are
09:46:10 still in blue, the switching transistor Q_s described in the
09:46:15 text from DTX-110. And now we have the scan electrode line
09:46:27 3_{N+1} and electrode line 1_M. This is the externally supplied
09:46:27 signal.

09:46:29 Over here we see Figure 3, which is a circuit
09:46:33 diagram from Utsugi. And I've highlighted in yellow the
09:46:36 signal electrode line 1_M and the 3_{N+1} line. And here we can
09:46:43 see the two transistors, Q_s and Q_i, and that they are being
09:46:47 driven by these external signals.
09:46:48 Q. Can you explain what it means to be driven by
09:46:51 something?
09:46:51 A. It means that the signal is applied to it.
09:46:57 Q. Dr. Fontecchio, what is the next limitation that you
09:46:59 looked at?
09:46:59 A. Next is [1c], insulation requirement.
09:47:04 Q. And, in your opinion, does Utsugi disclose the [1c]
09:47:08 insulation requirement?
09:47:09 A. It does, yes.
09:47:10 Q. And then you provided a slide that demonstrates why you
09:47:13 believe that's the case?
09:47:14 A. I have.
09:47:14 Q. And can you walk the jury through that analysis?
09:47:17 A. Yes. So in the upper left, we have the claim
09:47:19 limitation, and it requires an insulation film, which I've
09:47:24 identified in yellow, and in the text from DTX-110 at
09:47:28 Column 7. And it identifies a SiO_2 layer. This is silicon
09:47:34 dioxide. It's an insulating layer.
09:47:36 And over here in the figure, you can see SiO_2
09:47:40 highlighted in yellow. You can see the requirement that it

09:47:43 needs to be formed so as to cover said active elements.
09:47:47 The active elements are in blue. Source electrode S_{Q1} of
09:47:55 the current-controlling transistor Q_1. So these are the
09:47:58 active elements shown in the figure. And you can see the
09:48:00 insulation layer covering them, there in blue.
09:48:03 It also requires that the insulation have at least
09:48:06 one of these contact holes that I've described, the
09:48:09 vertical wire. And the text describes contact holes 56B.
09:48:15 And over here, in green, identified is the second
09:48:17 contact hole.
09:48:18 And so you can see that there is the blue
09:48:20 transistor and then a contact hole through the insulation
09:48:23 layer.
09:48:24 Q. And the particular text that you're looking at from
09:48:26 Utsugi, is that from Column 7, Line 46 to 52?
09:48:29 A. It is, yes.
09:48:35 Q. Dr. Fontecchio, what was the next limitation that you
09:48:37 then had to look at?
09:48:39 A. The next limitation was for a first electrode.
09:48:41 Q. And, in your opinion, does Utsugi disclose the first
09:48:45 electrode that's required by the claims?
09:48:47 A. It does, yes.
09:48:47 Q. Can you walk the jury through that analysis?
09:48:49 A. I can.
09:48:50 So the claim limitation requires a first

09:48:52 electrode, in purple. In the text of Utsugi, at Column 7,
09:48:57 46 to 51, it describes an electron injection electrode 55
09:49:02 to be formed as a lower electrode of the organic thin-film
09:49:07 EL element in the subsequent process. So this is our first
09:49:10 electrode layer.

09:49:11 He also describes in Column 6, 23 to 27, EL as a
09:49:16 layered organic thin-film EL element extends over the
09:49:19 capacitor C and the transistors Q_I and Q_s.

09:49:23 So this purple layer here is the first electrode.
09:49:26 You can see it's labeled electron injection electrode. You
09:49:32 can see it's formed on said insulation film. You can see
09:49:34 it's formed on top of the yellow insulation film layer.

09:49:37 From the claim language, it's to cover said active
09:49:41 elements. You can see that it covers the transistor, this
09:49:45 purple layer. And it's connected to said active elements
09:49:48 through at least one contact hole.

09:49:51 So this was the purpose of the contact hole, was
09:49:53 to connect electrically this purple layer down through the
09:49:57 contact hole to the electrode.

09:50:01 The contact holes are once again described in the
09:50:04 text in green and so are the electrodes in blue -- the
09:50:09 transistors in blue. Sorry, I misspoke.

09:50:12 There also is a requirement here that the first
09:50:15 electrode be made of a material which shields visible
09:50:17 light.

09:50:18 The first electrode layer is made out of a
09:50:20 material MgAg. You can see it's labeled here. MgAg is a
09:50:25 material which shields visible light.
09:50:27 Q. And does that property of MgAg change over time?
09:50:31 A. No, that's just the fundamental property of that metal.
09:50:35 Q. And, Dr. Fontecchio, what is the next limitation of the
09:50:38 claim?
09:50:38 A. Excuse me.
09:50:39 The next limitation is where -- is for the
09:50:42 electroluminescent layer.
09:50:43 Q. And, in your opinion, does Utsugi also disclose the
09:50:47 electroluminescent layer that's required by the claim?
09:50:52 A. It does.
09:50:52 Q. And can you walk the jury through the analysis you
09:50:55 performed?
09:50:55 A. I can.
09:50:56 So I'm adding in now this electroluminescent layer
09:50:58 in orange. It's described as: The organic
09:51:04 electroluminescent layer having an organic
09:51:06 electroluminescent material, and it's formed on the first
09:51:07 electrode.
09:51:08 In the text of Utsugi, at Column 6, 23 to 29, it
09:51:12 describes the luminescent element EL as a layered organic
09:51:17 thin-film EL element, extends to cover the capacitor and
09:51:22 transistors Q_I and Q_s, and the electron injection electrode

09:51:27 55, in purple.

09:51:28 So this is adding in this orange layer with the
09:51:32 yellow-orange striped layer in the middle. This is the
09:51:35 layered organic thin-film layer structure. You can see
09:51:35 that it is on the first electrode and that it covers the
09:51:41 active elements, the transistor.

09:51:42 Q. And the remainder of that limitation not highlighted
09:51:46 here says that it must: Include at least one layer which
09:51:49 emits light in accordance with the voltage applied to said
09:51:53 at least one layer.

09:51:54 Does Utsugi disclose that aspect, in your opinion?

09:51:56 A. It does, yes.

09:51:57 Q. And can you explain why that is?

09:52:00 A. Uh-huh, I can.

09:52:02 In the text, at Column 6, 59 to 63, it describes:
09:52:06 An electric field acting thereon, causing the organic
09:52:12 luminescent layer 52B to luminesce, externally emitting
09:52:18 flux of light.

09:52:18 So electric field is what is the result of
09:52:20 applying a voltage. It creates the electric field, so we
09:52:22 have our voltage applied. And the rest of this is saying
09:52:26 when we apply that voltage, that it will luminesce; it will
09:52:29 glow and emit light.

09:52:30 And we can see over here, in the figure, in the
09:52:34 yellow-striped layer, that we have this organic

09:52:38 luminescence layer, and this is where the light would be
09:52:40 emitted.
09:52:40 Q. And the portion of text that you were just reading
09:52:43 from, is that from Column 6, Line 59 to 63?
09:52:46 A. It is, yes.
09:52:47 Q. So, in your opinion, Dr. Fontecchio, does Utsugi
09:52:50 disclose all the limitation of Claim [1e]?
09:52:53 A. It does, yes.
09:52:54 Q. And what was the next limitation that you then looked
09:52:56 at for your analysis?
09:52:57 A. The next one is the second electrode.
09:53:00 Q. And, in your opinion, does Utsugi also disclose the
09:53:03 second electrode that's claimed?
09:53:04 A. It does, yes.
09:53:05 Q. And can you explain to the jury why you believe that's
09:53:07 the case?
09:53:07 A. Yes. So the second electrode I've highlighted in
09:53:12 green. In the text, at Column 6, 53 to 59, it describes:
09:53:17 A hole injection electrode 54.
09:53:20 And we can see here in the figure, hole injection
09:53:22 electrode 54, it's green, all on the top here.
09:53:27 It's required that it's formed on said organic
09:53:32 electroluminescent layer, and you can see that it's formed
09:53:33 on top of the orange and yellow electroluminescent layer.
09:53:39 And it covers said active elements, which are in blue.

09:53:42 Down here, the transistor, you can see that it covers --
09:53:45 excuse me.
09:53:46 Q. And so, in your opinion, does Utsugi meet all of the
09:53:49 limitations of this particular claim element?
09:53:51 A. It does, yes.
09:53:53 Q. And, Dr. Fontecchio, what did you then look at next
09:53:57 with respect to the claim?
09:53:58 A. Next, I moved on to [4a], which requires that the
09:54:04 active elements are a selection transistor.
09:54:07 Q. And then what does it require of the selection
09:54:10 transistor for Limitation [4a]?
09:54:13 A. That it's turned on in response to an externally
09:54:18 supplied address signal.
09:54:18 Q. Does Utsugi describe that type of selection transistor?
09:54:22 A. It does.
09:54:22 Q. And can you walk the jury through your analysis?
09:54:24 A. Yes. So here is Claim [4a], which requires a selection
09:54:28 transistor, which is turned on. In the text of Utsugi at
09:54:32 Column 7, 9 through 12, it describes the switching
09:54:35 transistor Q_s and transistor Q_s.
09:54:40 And later in the text, Column 8, 12 to 13, it
09:54:44 describes the switching transistor Q_s is turned on.
09:54:46 And you can see Q_s identified over here in the
09:54:49 circuit diagram.
09:54:50 Q. What type of line is the line that you've labeled

09:54:54 here -- or that has been labeled here, apologies, as 3_{N+1}?
09:55:00 A. So 3_{N+1} is a scan electrode line. It's identified in
09:55:04 the text and this is used to externally supplied address
09:55:07 signal.
09:55:08 Q. And within the display, what is the function of a scan
09:55:12 electrode line?
09:55:12 A. It's to supply the signal to each of the transistors to
09:55:16 turn them on when you want the pixels to illuminate.
09:55:21 Q. And how many scan electrode lines do you have in a
09:55:22 display?
09:55:22 A. You'd have a whole lot of them. I don't know how many
09:55:23 rows and columns you have, but there would be one for each
09:55:26 of the rows.
09:55:26 Q. What's the next limitation that you then looked at,
09:55:31 Dr. Fontecchio?
09:55:31 A. The next is a drive transistor.
09:55:34 Q. And, in your opinion, does Utsugi disclose the
09:55:38 particular drive transistor required by the claims?
09:55:41 A. It does, yes.
09:55:42 Q. And can you walk the jury through your analysis of that
09:55:46 particular limitation?
09:55:46 A. Yes. So our drive transistor is highlighted in green.
09:55:50 You can see it over here in the figure as Q_I in Figure 3.
09:55:56 It needs to be driven by a signal corresponding to image
09:55:59 data, in orange.

09:56:01 The signal electrode line 1_m is described in Utsugi
09:56:05 at Column 8, 13 to 16. And in Utsugi, at Column 1, 6
09:56:11 through 9, it describes this is for a display purpose.
09:56:14 So the signal electrode line is supplying image
09:56:17 data, and you can see this signal electrode line 1_m over
09:56:21 here in the figure.
09:56:22 And we can see the selection transistor that's
09:56:26 required in blue identified here in the text as switching
09:56:28 transistor Q_s, and that's right over here in the figure.
09:56:32 Q. And, in your opinion, is the selection transistor
09:56:36 passing through an image data that was supplied externally?
09:56:40 A. Yes, it is.
09:56:41 Q. And can you explain why that is?
09:56:43 A. Because the data is coming from this signal electrode
09:56:46 line, it's external, and then it enters the circuit here.
09:56:50 This is the circuit.
09:56:54 In fact, in this figure there are actually four
09:56:56 sub- pixel circuits, but we've just been focusing on one.
09:56:59 Q. How many sub-pixels would you expect to find in a
09:57:04 normal display?
09:57:04 A. Millions.
09:57:06 Q. Dr. Fontecchio, what's required by the remainder of the
09:57:09 limitation?
09:57:09 A. The remainder of the limitation requires while said
09:57:15 selection transistor is on for controlling a voltage to be

applied to said organic electroluminescent layer.

Q. And did you also analyze that latter half with the element?

A. I did, yes.

Q. And, in your opinion, does Utsugi disclose that, as well?

A. It does.

Q. And can you explain?

A. Yes. So in the text of Utsugi at Column 6, 59 to 63, it describes, there develops an electric field -- and remember, electric field is the result of applying voltage -- acting thereon, causing the organic luminescent layer 52B to luminesce, externally emitting flux of light. And so it's this external signal causing it to emit light.

It later goes on at Column 8, 20 to 28, to describe, according to a drain current versus gate voltage characteristic of the transistor Q_I, so this is the drive transistor Q_I.

And then it describes for how the voltage is applied, in yellow. An electric current runs through a specific established conducting route, the power source electrode Line 5 to the luminescent element EL to the transistor Q_I to the scan electrode line causing the luminescent element EL to luminesce. So it's describing what is required in Claim [4b].

09:58:32 Q. And, in particular, can you explain how the two pieces
09:58:36 of text you just described relate back to the control gate
09:58:39 voltage?
09:58:39 A. Yes. So this text describes how the electric field is
09:58:42 applied and how the current flows through it, and voltage
09:58:45 is related to current and creates an electric field.
09:58:49 Q. Dr. Fontecchio, did you also analyze the last
09:58:52 limitation of Claim 4?
09:58:53 A. I did. It requires that a selection transistor and
09:58:57 drive transistor form a pair.
09:58:58 Q. And, in your opinion, does Utsugi disclose a selection
09:59:02 transistor and a drive transistor to form a pair?
09:59:04 A. It does.
09:59:05 Q. And can you walk the jury through that particular
09:59:10 analysis?
09:59:11 A. Yes. So we can see in the text at -- of Utsugi at
09:59:16 Column 5, 50 to 56, it describes a pair of reversely
09:59:22 staggered amorphous silicon TFTs have a switching
09:59:28 transistor and a current-controlling transistor. And we
09:59:28 see over here in the figure, Q_s and Q_i are a pair within
09:59:33 this sub-pixel.
09:59:34 Q. So, in your opinion, prior to the '450 patent, had
09:59:40 Utsugi disclosed all of the elements of Claims 4 of that
09:59:43 patent?
09:59:43 A. It had, yes.

09:59:45 Q. If we can move on to Claim 5. What's required by
09:59:51 Claim 5, Dr. Fontecchio?
09:59:52 A. Claim 5 requires that the first electrode is connected
09:59:55 to the drive transistor through said at least one contact
09:59:59 hole.
09:59:59 Q. And, in your opinion, does Utsugi also disclose the
10:00:03 element of Claim 5?
10:00:04 A. It does, yes.
10:00:06 Q. And can you explain why that is?
10:00:07 A. Yes. So the first electrode that's required is in
10:00:12 purple. It's described in the text of Utsugi at Column 6,
10:00:17 50 to 52 as electrode 55. That's this purple first
10:00:21 electrode layer we see here in the figure.
10:00:23 The drive transistor is in blue. We can see in
10:00:28 the text. It describes a drain electrode Q_{QI} of the
10:00:32 current-controlling transistor Q_i, which is the transistor
10:00:36 in blue right here.
10:00:37 And then it requires it's connected through at
10:00:39 least one contact hole. In the text it describes second
10:00:42 contact holes 56B. And here in the figure we see the
10:00:47 second contact hole connecting this first electrode layer
10:00:49 and the transistor that's blue.
10:00:51 Q. And so, in your opinion, prior to the '450 patent, had
10:00:58 Utsugi already disclosed all of the elements of Claim 5?
10:01:01 A. In my opinion, it had, yes.

10:01:03 Q. Now, what aspects of the claims does Solas argue is not
10:01:08 disclosed by Utsugi?
10:01:10 A. The insulation layer limitation.
10:01:12 Q. In your understanding, do they dispute any other
10:01:16 limitations?
10:01:16 A. My understanding, they do not.
10:01:18 Q. And what is it about the insulation limitation that
10:01:24 Solas disputes?
10:01:25 A. They dispute whether or not Utsugi describes the
10:01:28 insulation layer covering both transistors, the drive and
10:01:31 the selection transistor, since that cross-section only
10:01:35 shows one transistor.
10:01:36 Q. Now, in your opinion, would a person of ordinary skill
10:01:40 in the art understand Utsugi to be disclosing that that
10:01:42 insulation layer covers both transistors that you
10:01:45 discussed?
10:01:45 A. Yes, they would.
10:01:46 Q. And what is the purpose of that insulating layer in
10:01:51 Utsugi?
10:01:51 A. So the purpose of the insulating layer is to prevent
10:01:54 that first transistor -- or the transistor when you make
10:01:57 it, from electrically shorting with the purple first
10:02:01 electrode layer. Those are both conducting materials, and
10:02:04 to prevent electrical shorting, you need to put an
10:02:07 insulating layer in between.

10:02:08 Q. Can you explain what you mean by electrically shorting?
10:02:12 A. Yes. If -- if two pieces of metal that are carrying
10:02:16 electrical signal touch together, it causes the signals to
10:02:19 cancel out and for it to not work.
10:02:21 So the first electrode is doing -- is being
10:02:23 controlled by the transistor, and so you don't want them to
10:02:27 touch. You want them to be connected in the right way and
10:02:29 be separated.
10:02:31 Just like you have a power wire for -- here for
10:02:37 this monitor, it has two wires running in it that are
10:02:40 insulated from each other. It's the same idea. You don't
10:02:43 want them to touch because it will cause an electrical
10:02:46 short.
10:02:46 MR. FRISCH: Mr. Beall, can you please pull up
10:02:49 Figure 5 of Utsugi?
10:02:52 Q. (By Mr. Frisch) Is Q_s shown -- Q_s the transistor, the
10:02:58 second transistor, is that shown in Figure 5 of Utsugi,
10:03:01 Dr. Fontecchio?
10:03:01 A. Q_s is not shown.
10:03:06 Q. And why is Q_s not shown in Figure 5?
10:03:10 A. So when Utsugi took the cross-section to make Figure 5,
10:03:14 they happened to have picked going through transistor Q as
10:03:20 shown here.
10:03:20 MR. FRISCH: Mr. Beall, can you put up Figure 4 of
10:03:24 Utsugi next to Figure 5?

10:03:30 Q. (By Mr. Frisch) And, Dr. Fontecchio, can you generally
10:03:32 identify in Figure 4 where transistor Q_i is located?
10:03:36 A. Yes. That's this -- this is where the cross-section
10:03:39 was taken. So the transistor Q_i is here, which is why we
10:03:43 see it in Figure 5.
10:03:44 Q. And, generally, on Figure 4, where is transistor Q_s
10:03:49 located?
10:03:50 A. It's located down here, generally.
10:03:51 Q. And so can you explain again how the location of Q_s
10:03:57 related to where this cross-section was taken?
10:03:57 A. Q_s happens to not be where we took a slice of our cake
10:04:04 to look at it.
10:04:05 Q. Now, based on the manufacturing process that's
10:04:07 disclosed in Utsugi, if you took a cross-section in a
10:04:10 different location above transistor Q_s, what would you
10:04:14 expect to find?
10:04:15 A. I would expect to find the insulation layer there.
10:04:17 Q. And have you prepared a model to help demonstrate why
10:04:22 it is you believe that to be the case?
10:04:23 A. I have, yes.
10:04:24 Q. I'd like to walk through that model. Can you take us
10:04:31 through the first slide?
10:04:32 THE COURT: Let me interrupt just a minute.
10:04:34 Before we transition to this model, we're going to
10:04:38 take a short recess, and we'll come back to this as soon as

we complete this recess for the jury.

Ladies and gentlemen of the jury, if you'll simply close your notebooks and leave them in your chairs, follow all the instructions I've given you, and we'll be back here in a relatively short period of time to continue with this direct examination. But given that it's after 10:00 a.m., we will have a short recess at this time.

The jury is excused for recess.

COURT SECURITY OFFICER: All rise.

(Jury out.)

THE COURT: Counsel, I'll do my best to keep this short.

The Court stands in recess.

(Recess.)

(Jury out.)

COURT SECURITY OFFICER: All rise.

THE COURT: Be seated, please.

Mr. Frisch, are you prepared to continue with your direct examination?

MR. FRISCH: I am, Your Honor.

THE COURT: All right. Let's bring in the jury, please, Mr. Johnston.

COURT SECURITY OFFICER: All rise.

(Jury in.)

THE COURT: Please be seated, ladies and

10:22:46 gentlemen.

10:22:46 We'll continue with Defendants' direct examination of the witness.

10:22:51 You may proceed, counsel.

10:22:55 Q. (By Mr. Frisch) Dr. Fontecchio, to reorient ourselves, how many limitations of the asserted claims does Solas believe were not shown in the Utsugi reference?

10:23:06 A. Just one, the insulation layer limitation.

10:23:09 Q. And, in your opinion, does Utsugi disclose that particular limitation?

10:23:13 A. In my opinion, it does.

10:23:15 Q. And have you prepared a model to show why you believe that's the case?

10:23:22 A. I have, yes.

10:23:23 Q. And how did you go about preparing this model?

10:23:27 A. So I went through, and I used the specification, the description in the patent, and I also used some of the figures in the patent to follow the instructions that are written for how to make the structure. And I went and I built the model of what the structure would look like.

10:23:45 Q. And can you explain the first aspect of your model here?

10:23:48 A. Yes. So the first aspect that's required is that it be built on a substrate, a glass base 50. And so this first yellow layer is our glass base that I'm going to build the

10:24:01 circuit on.
10:24:02 Q. What does Utsugi say happens next in the manufacturing
10:24:05 process?
10:24:05 A. So next in the manufacturing process, a layer of Cr is
10:24:12 grown, chromium, is grown on the glass base. You can see
10:24:18 this on the left, and it is grown across the glass base
10:24:21 surface. Growing means that you grow everywhere.
10:24:24 And then on the right, we have a patterning
10:24:27 process. So what we do is we remove some parts of this red
10:24:32 chromium layer to leave the structures that we want for our
10:24:35 electronic circuits.
10:24:36 The patterning process is executed, it creates the
10:24:39 scan lines, a lower electrode of the charge holding
10:24:42 capacity C, gate electrode of the switching transistor Q_s,
10:24:46 and the gate electrode of the current-controlling
10:24:50 transistor Q_i. So this is describing the process for both
10:24:54 transistors.
10:24:54 And you can see down here that this
10:24:57 pattern-process has left us with this structure.
10:24:59 So, essentially, what's happening in a
10:25:03 pattern-process or any kind of patterning is that we're
10:25:06 using a mask. It's almost like doing lithography on a
10:25:10 t-shirt. Like when you screen print a t-shirt, and you
10:25:14 have a pattern and you put ink through the pattern and
10:25:19 you're left with letters or your image, it's similar to

10:25:19 that. You use that concept to pattern and etch away
10:25:23 material or deposit material where you want it.
10:25:24 Q. How did you know which portions of the chromium layer,
10:25:27 that you've seen here in red, to take away and what to
10:25:30 leave?
10:25:30 A. So I used this description in the upper right corner in
10:25:33 combination with the figure that Utsugi has of what the
10:25:36 structure will look like and the map view that shows where
10:25:41 things are laid out.
10:25:42 Q. What is the next step according to the Utsugi
10:25:45 manufacturing process?
10:25:45 A. So the next step is, in the upper left corner, we
10:25:49 deposit an SiO_2 layer. It's let to grow 400 nanometers to
10:25:53 provide gate insulation.
10:25:55 So this is the first insulation layer, in light
10:25:57 green, it's grown over the surface. It's not thicker than
10:26:00 the previous layer particularly, and so you wind up with
10:26:04 some texture there.
10:26:08 Then what we're going to do is etch to open the
10:26:10 first contact holes over here on the right. So this
10:26:13 insulation layer on the left here, you can see it went over
10:26:16 the conductive chromium layer. So we need to open this up.
10:26:19 So for those contact holes, if you recall, I said
10:26:21 it was making a hole in an insulation layer and then
10:26:24 filling it with metal. We need to empty it out that so we

10:26:26 can put the metal in there.
10:26:28 Q. You've identified a second set of contact holes,
10:26:30 towards the bottom. How did you know that those contact
10:26:33 holes existed?
10:26:34 A. So those are in the figure, Figure 4, from Utsugi. It
10:26:38 shows where they are, and they would be etched at the same
10:26:42 time in the process.
10:26:42 Q. What is the next step that Utsugi says occurs in the
10:26:45 manufacturing process?
10:26:46 A. So now we're going to put down some semiconducting
10:26:51 layers.
10:26:51 So the next one is -- sorry, I lost my dot, there
10:26:54 it is -- is that -- next is an intrinsic amorphous silicon
10:26:59 layer is grown on the SiO_2. So this amorphous silicon
10:27:04 layer in orange is grown across the surface.
10:27:07 Q. And what's the purpose of that layer?
10:27:08 A. That's going to be a semiconducting layer to make the
10:27:12 channels in our transistors.
10:27:12 Q. And then what happens next in the manufacturing
10:27:15 process?
10:27:15 A. So next we're going to grow an n^+ doped amorphous
10:27:22 silicon layer for ohmic contact use. It's grown on the
10:27:23 top. This will be part of the channels, as well.
10:27:27 Then what we're going to do is the grown layers
10:27:29 are concurrently pattern-processed to define small islands

10:27:33 of this amorphous silicon.

10:27:35 So what we've done here is we've removed all the
10:27:38 parts of the silicon that we don't need, and we've left
10:27:41 these islands, which are combinations of those two layers I
10:27:45 put down of silicon, which is why they're kind of this
10:27:52 striped color.

10:27:53 Q. What are those two islands used for?

10:27:56 A. So these will be the channels and the transistors. So
10:27:58 between the two metal gates -- sorry, the two source and
10:28:03 drain electrodes, this is what's going to control the flow
10:28:03 through the switch. This is the valve, if you will.

10:28:05 Q. And then what does Utsugi say happens next?

10:28:11 A. So next we deposit -- another chromium layer is
10:28:14 deposited, and then we will pattern-process it again over
10:28:16 here on the right. And this is going to provide our signal
10:28:20 line electrode, our source electrode, S_{QI}, a drain
10:28:25 electrode, D_{QI}, so we've built Q_i, and then the drain
10:28:30 electrode and source electrode of the switching transistor
10:28:32 Q_s and the upper electrode of the charge holding capacitor
10:28:36 C and the first contacts.

10:28:38 So you can see we're left with all this blue
10:28:40 structure here, which is made out of metal, so it's
10:28:42 conductive.

10:28:43 Q. How did you know where to pattern-process this blue
10:28:46 chromium layer?

10:28:47 A. I used the figures from the patent to show me where the
10:28:51 structures would be.
10:28:51 Q. And then what happens next in the process?
10:28:55 A. So next what we have is the channels are formed. So
10:28:59 the channels of both transistors, Q_i and Q_s, are formed by
10:29:03 etching the islands.
10:29:05 And so we can etch them to an intermediate layer
10:29:09 depth using the pattern-process chromium, and we are left
10:29:12 with these channels here exposed in the transistors.
10:29:16 Q. And after you form the channels, what do you do?
10:29:19 A. So then we grow a second insulating layer of SiO_2
10:29:24 across the surface. It's like grown. And then it is
10:29:27 etched to open up the second set of contact holes, 56B, for
10:29:30 intercommunication between the source electrode S_{QI} and the
10:29:35 controlling transistor Q_i.
10:29:37 So this is the layer that Solas contends doesn't
10:29:40 cover the second set -- the second transistor, which is
10:29:43 down here.
10:29:43 Q. And why, in your opinion, according to the
10:29:45 manufacturing steps, does that insulation layer cover both
10:29:47 transistors?
10:29:48 A. Well, it describes it quite clearly as letting the
10:29:52 layer grow. And in micro-manufacturing, "grow" means that
10:29:55 you grow across the entire surface. That's what the term
10:29:58 means.

10:29:59 Also, you can see here that when you're putting it
10:30:02 down and you're growing it, it just makes sense to grow it
10:30:05 everywhere since you need insulator everywhere.
10:30:08 Q. And when does that growth occur within the
10:30:11 manufacturing steps with respect to building the
10:30:13 transistors themselves?
10:30:14 A. It occurs after the transistors are built so that it
10:30:16 protects them from the next -- the first electrode.
10:30:19 Q. So what is the next step in the manufacturing process
10:30:23 of Utsugi?
10:30:23 A. So next we're going to grow an MgAg layer, which is our
10:30:29 first electrode, and then we're going to process it. So
10:30:31 it's processed using a lift-off method, which is just
10:30:34 another method of patterning, to form our first electron
10:30:38 injection electrode here.
10:30:42 Q. And, again, how did you know how to pattern this
10:30:44 particular layer?
10:30:44 A. I used the figures from the patent to show me what the
10:30:49 shapes would look like.
10:30:50 Q. What would be the next layer that Utsugi said is added?
10:30:52 A. Next we put down a spacer layer 52C to put over the
10:30:57 surface. This is just to provide space material between
10:31:01 the first electrode and the electroluminescent layers we're
10:31:04 going to put down.
10:31:04 Q. And what is the next manufacturing step?

10:31:06 A. So now we're putting down the organic luminescent
10:31:10 layer 52B across the surface. This the layer that will
10:31:15 eventually emit light.
10:31:16 Q. And what is formed after the organic electroluminescent
10:31:18 layer?
10:31:18 A. So now we form a hole injection layer 52A across the
10:31:22 surface. This will just give us better connection, if you
10:31:25 will, between the second electrode and the
10:31:28 electroluminescent layer.
10:31:28 Q. And what comes after the hole injection layer?
10:31:31 A. Now, we get the hole injection electrode 54. This is
10:31:34 the second electrode on the top.
10:31:36 Q. And are there any more layers in the device described
10:31:39 by Utsugi?
10:31:40 A. There are not.
10:31:40 Q. Dr. Fontecchio, what did you do next with your model?
10:31:45 A. So next I wanted to verify my model was right that I
10:31:49 built.
10:31:49 So I went back and I used the same cross-section
10:31:53 from Figure 4 to cut through to see if what I built looks
10:31:57 like the same cross-section from -- in Figure 5, which is
10:32:01 what Utsugi had put in Figure 5.
10:32:04 MR. FRISCH: Mr. Beall, can you take the slide
10:32:07 that we're seeing now and put it up next to Figure 4 of
10:32:11 Utsugi?

10:32:11 A. Great, thank you.
10:32:12 Q. (By Mr. Frisch) So using these two figures,
10:32:14 Dr. Fontecchio, can you explain what you mean when you said
10:32:17 you took the same cross-section?
10:32:18 A. Yes. So I built this layer cake, I guess I built a
10:32:22 rectangular layer cake. And I basically built it like the
10:32:25 same as this figure on the right.
10:32:27 This Line A is where Utsugi makes the cut to look
10:32:31 at the slice of the layer cake for Figure 5, the
10:32:35 cross-section. So I took the same one. And I wanted to
10:32:39 verify that what I built looks like what Utsugi built in
10:32:43 Figure 5.
10:32:44 MR. FRISCH: Mr. Beall, can we go back to the
10:32:46 slides?
10:32:47 Q. (By Mr. Frisch) And so what do we see here?
10:32:50 A. So here I've taken that slice. I cut a slice out of it
10:32:54 like cutting a slice of cake, and then I made some of it to
10:32:59 be semitransparent, and we can rotate it to see it a little
10:33:04 bit better.
10:33:04 Okay. So on the left, we have my model, the
10:33:07 cross-section that I just took following Line A, and on the
10:33:10 right is Utsugi 5, which is from Line A. The only
10:33:14 annotation I did was add colors so that they match the
10:33:18 layers.
10:33:18 You can see that the structure that I've built on

10:33:20 the left matches the figure on the right from Utsugi.
10:33:24 Q. And so what does that tell you about your model?
10:33:28 A. It tells me that I put down the layers correctly and
10:33:32 that the instructions do indeed teach you how to make this
10:33:36 layer structure of Utsugi, that it shows you in Figure 5.
10:33:38 Q. What did you do next with your model?
10:33:40 A. So now I'm going to take a different cross-section and
10:33:43 look at the other transistor. I am going to cut along this
10:33:47 dotted line, and it's going to show me what the other
10:33:51 transistor looks like, and I can take a look and see if
10:33:54 there's an insulation layer there.
10:33:57 Q. So what's shown here?
10:33:58 A. So here I've taken that slice, and it's a little easier
10:34:01 if we rotate it. And we can see it from the side. We
10:34:05 definitely have structure. Over here on the left is the
10:34:08 transistor we're interested in. Over here on the right, we
10:34:11 have some cross-section through contact holes, I believe,
10:34:16 just because it happens to be there.
10:34:17 But let's zoom in on the left.
10:34:19 Q. And what do you see when you zoom in on the particular
10:34:24 transistor?
10:34:24 A. So here I see this second transistor. I have my gate
10:34:30 electrodes at the bottom, I have my source and drain
10:34:33 electrodes in blue on the sides. And then I have my
10:34:36 channel region. I have my first electrode in gray. And

here in between you can see this purple insulation layer. This is the layer that Solas contends isn't there.

Q. And so what, in your opinio,n does your model show about whether there's insulation layer over the second transistor if you are to follow the manufacturing steps provided in Utsugi?

A. My model shows that if a person there -- a person of ordinary skill in the art follows the instructions in Utsugi, it shows you that there is an insulation layer over both transistors.

Q. So, Dr. Fontecchio, in your opinion, does Utsugi disclose every limitation of Claims 4 and 5 of the '450 patent?

A. In my opinion, it does, yes.

Q. Dr. Fontecchio, let's just say, for the sake of argument, that Utsugi doesn't explicitly disclose the SiO_2 layer over the second transistor. In your opinion, would it be obvious to form that insulation material in that location?

A. It would, yes. You'd have to have an insulation layer there or the circuit would not work. So you would have to form one.

Q. At the time Utsugi was filed, would a person of ordinary skill in the art know how to form an SiO_2 layer in that particular location?

10:35:55 A. Yes, they would. That would be a common technique.
10:35:57 Q. Would a person of ordinary skill in the art have an
10:36:01 expectation of success in laying that insulation film down
10:36:05 in that location?
10:36:06 A. They would, yes; especially since they're laying it
10:36:11 down in the other location at the same time.
10:36:13 Q. With respect to the particular limitation we've been
10:36:16 discussing, the insulation layer being over the
10:36:20 transistors, are you aware of any commercial success of any
10:36:24 product that's tied to this particular limitation of the
10:36:27 claims?
10:36:28 A. No, I'm not.
10:36:30 Q. Are you aware of any long-felt but unfulfilled need in
10:36:36 the industry tied to this particular limitation?
10:36:38 A. No.
10:36:38 Q. Are you aware of any failure by others tied to this
10:36:42 particular limitation of putting insulation and film over
10:36:46 transistors?
10:36:46 A. I am not, no.
10:36:52 MR. FRISCH: Your Honor, I'm going to now ask a
10:36:54 few more questions related to confidential information, so
10:36:57 I'd ask if we could seal the courtroom.
10:36:59 THE COURT: Based on counsel's request and
10:37:02 representations, I'll order the courtroom sealed.
10:37:04 Those present not subject to the protective order

in this case should excuse themselves and remain outside the courtroom until it's reopened and unsealed.

(Courtroom sealed.)

(This portion of the transcript is sealed and filed under separate cover as Sealed Portion No. 14.)

(Courtroom unsealed.)

THE COURT: All right. Mr. Fenster, you may proceed with cross-examination of the witness.

MR. FENSTER: Thank you, Your Honor.

CROSS-EXAMINATION

BY MR. FENSTER:

Q. Good morning, Dr. Fontecchio.

A. Good morning, Mr. Fenster.

MR. FENSTER: Good morning, ladies and gentlemen.

Q. (By Mr. Fenster) Dr. Fontecchio, you're serving as an expert witness in this case, right?

A. Yes, sir.

Q. And in connection with your work in this case, you had to submit a report setting forth all of your opinions on infringement and all of your opinions on validity, correct?

A. Two reports, yes.

Q. And you included -- and you made sure that those reports were complete and accurate, right?

A. To the best of my ability.

10:49:19 Q. And you also sat for a deposition in this case where
10:49:22 you testified under oath like you are today; is that
10:49:24 correct?
10:49:24 A. Yes.
10:49:26 Q. Now, you agree that since you've done both infringement
10:49:33 and validity, you have to apply the claims consistently
10:49:38 when you do infringement and validity, correct?
10:49:41 A. Yes.
10:49:42 Q. You can't apply them one way for infringement and
10:49:45 another for validity, right?
10:49:46 A. Correct.
10:49:49 Q. Okay. Let's talk about what the proper infringement
10:49:53 analysis is.
10:49:53 So just to orient you, since we bounced around,
10:49:58 I'm going to talk about the '450 first because -- so we can
10:50:02 do that unsealed. We'll talk about the '450 first. We'll
10:50:04 talk about your infringement opinions and then validity and
10:50:08 then the '338. Okay?
10:50:09 A. Okay.
10:50:09 Q. Okay.
10:50:10 A. Thank you.
10:50:10 Q. So you've been here throughout trial?
10:50:16 A. Mostly.
10:50:16 Q. Okay. So you've heard Mr. Haslam ask Mr. Credelle and
10:50:21 Mr. Dell if they looked at various teardowns that Solas did

10:50:25 in this case before the case started. Do you recall that?
10:50:29 A. I do.
10:50:30 Q. In fact, they kind of made a big deal out of the fact
10:50:34 that teardowns weren't looked at or something, from before
10:50:37 the case, right?
10:50:38 A. I've heard it discussed. I don't know if it was a big
10:50:42 deal, but...
10:50:43 Q. Okay. So those teardowns were done before this
10:50:45 litigation and before Samsung produced its confidential GDS
10:50:50 and PDR documents to Solas, correct?
10:50:52 A. I don't know. I don't know when the teardowns were
10:50:58 done.
10:50:58 Q. Now, Mr. Credelle testified that he based his analysis
10:51:01 on Samsung's GDS and PDR files for each accused phone that
10:51:06 were produced in this case. Do you recall that?
10:51:08 A. I do recall that.
10:51:09 Q. And the Samsung GDS files, the confidential GDS files
10:51:15 that they produced, is the actual graphic design layout for
10:51:18 the accused products. It's like, as you described, a
10:51:21 blueprint for the product, correct?
10:51:23 A. Yes.
10:51:23 Q. And you agree that the GDS files that Mr. Credelle
10:51:27 relied on and based his infringement analysis on accurately
10:51:31 describe the accused products, right?
10:51:33 A. The GDS files accurately describe the products, yes.

10:51:37 That's my understanding.
10:51:38 THE COURT: Slow down a little bit, please --
10:51:41 THE WITNESS: Oh, I'm sorry.
10:51:42 THE COURT: -- Dr. Fontecchio.
10:51:49 Q. (By Mr. Fenster) And Mr. Credelle also testified that
10:51:53 he relied on the preliminary design review, the PDR files,
10:51:56 produced by Samsung?
10:51:57 A. Yes.
10:51:58 Q. And the PDR files produced by Samsung and relied upon
10:52:01 by Mr. Credelle also accurately describe the accused
10:52:04 products, correct?
10:52:05 A. I have no reason to question their accuracy.
10:52:08 Q. Now, infringement, the only proper analysis for
10:52:23 infringement is comparing the accused products to the
10:52:27 actual claim language, correct?
10:52:29 A. That's my understanding.
10:52:31 Q. You saw opening statements by -- you were here for the
10:52:40 opening statements?
10:52:40 A. I was.
10:52:41 Q. You've seen Mr. Haslam show that diagram from Figure 7
10:52:45 of the patent, and he used that with some of the witnesses.
10:52:49 You recall that?
10:52:50 A. I was here for opening. I don't recall which figure
10:52:52 you mean.
10:52:55 MR. FENSTER: Can we just show opening DDX-1.006?

10:53:08 I'm sorry, it's the opening slide. That's okay.
10:53:19 Q. (By Mr. Fenster) You agree that for infringement, it
10:53:22 is absolutely improper to compare the accused products to
10:53:26 figures from the asserted patent, right?
10:53:30 A. My understanding is you need to compare to the claim
10:53:33 limitation language.
10:53:34 Q. It's improper to compare the accused products to the
10:53:39 specification of the accused products, right?
10:53:42 A. So I think you can compare them, but for infringement,
10:53:47 you need to show that they match the claim limitations.
10:53:50 Q. And so for infringement, the only proper comparison is
10:53:56 to the actual language of the claims, right?
10:53:57 A. Yes.
10:53:58 Q. And the same is true for validity, right?
10:54:02 A. Yes.
10:54:04 Q. Now, you were here for the testimony of Mr. Kwak?
10:54:16 A. Yes.
10:54:17 Q. And Mr. Kwak was asked to testify about two of his
10:54:23 patents. Do you recall that?
10:54:24 A. I recall that.
10:54:25 Q. His patents have nothing to do with the technical
10:54:29 issues of infringement or validity in this case, correct?
10:54:32 A. I believe that's true.
10:54:39 Q. Mr. Kwak's patents that he testified about are totally
10:54:44 irrelevant to whether Samsung infringes Solas's asserted

patents in this case, correct?

MR. FRISCH: Objection, Your Honor.

THE COURT: What's your objection?

MR. FRISCH: I don't believe there's any foundation for -- laid for whether Dr. Fontecchio knows even what these patents are about.

MR. FENSTER: He knows that the proper comparison is the product to the claims and not to anything related to the product.

THE COURT: He apparently does because we've gone over it about three times. Let's move on.

MR. FENSTER: Okay.

Q. (By Mr. Fenster) Now, Samsung has also referenced some patents that Samsung has that related to their patents. Do you recall that?

A. I'm not sure what you mean.

Q. Mr. Kwak testified and Mr. Haslam suggested that Samsung is very innovative; they have their own patents. Do you recall all that?

A. I do recall that.

Q. Whether Samsung has their own patents has nothing to do with whether they infringe the asserted patents in this case, right?

A. Yes.

Q. If the accused products match the asserted claims, the

10:55:54 elements of the asserted patents, they infringe regardless
10:55:59 of whether Samsung has patents or not, right?
10:56:01 A. If they match all of the claims.
10:56:03 Q. That's right.
10:56:08 Okay. Let's turn to your infringement opinions,
10:56:13 non-infringement opinions with respect to the '450 patent.
10:56:14 So, as I understand it, you had two reasons that
10:56:17 the accused products, in your opinion, do not infringe the
10:56:22 '450 patent, correct? One was [1d], connected, and the
10:56:25 other was the external signal related to the switch -- to
10:56:29 the selection transistor, right?
10:56:36 A. Yes.
10:56:36 MR. FENSTER: Can I have Plaintiff's Demo-504,
10:56:43 please?
10:56:43 Q. (By Mr. Fenster) Okay. So this is the element that
10:56:45 you were referring to, correct?
10:56:46 A. I'm not sure what you mean by "element."
10:56:52 Q. Element [1d], that the electrode is connected to said
10:56:58 active elements through at least one contact hole.
10:57:02 A. Okay.
10:57:02 Q. Right, that was the basis for your opinion?
10:57:05 A. Yes.
10:57:05 Q. Okay. And you had no opinions on Elements [1a], [b],
10:57:10 or [c], right?
10:57:11 A. I didn't render opinions in my discussion today -- in

10:57:16 my testimony.
10:57:17 Q. You didn't dispute those today?
10:57:19 A. That's correct.
10:57:21 Q. Okay. Now, Element [1d] requires that the electrode be
10:57:24 connected to said active elements through the contact hole,
10:57:28 correct?
10:57:28 A. That's correct.
10:57:31 Q. And the contact hole is in the insulation layer, right?
10:57:34 A. Yes.
10:57:34 Q. And the insulation layer is between the active elements
10:57:38 and the pixel electrode, correct?
10:57:40 A. Yes.
10:57:44 Q. And the insulation layer is insulating, meaning it does
10:57:48 not conduct electric signals, right?
10:57:51 A. Yes, that's what that means.
10:57:53 Q. In fact, as you just explained in connection with
10:57:55 Utsugi, the whole point of the contact hole is to allow
10:57:58 electrical communication between the circuit and the
10:58:02 electrode, correct?
10:58:03 A. That's correct.
10:58:09 Q. Now, on Plaintiff's Slide 4, you see the accused
10:58:19 circuit in the Samsung products during the light-emission
10:58:25 period, correct?
10:58:25 A. I do.
10:58:26 Q. And during the light-emission period, T1, the driving

10:58:34 transistor, is electrically connected to the pixel
10:58:36 electrode, correct?
10:58:36 A. It's electrically connected.
10:58:42 Q. And during the emission period, the drain of T3 is also
10:58:51 electrically connected to the pixel electrode, correct, for
10:58:59 the same reason?
10:58:59 A. It's electrically connected.
10:59:01 Q. Now, you agree that infringement depends on the actual
10:59:06 words of the claim, right?
10:59:07 A. Yes.
10:59:09 Q. It is absolutely improper in doing an infringement
10:59:14 analysis to import or add limitations into the claim that
10:59:18 are not there, correct?
10:59:19 A. Okay.
10:59:22 Q. Do you understand that?
10:59:24 A. Yes.
10:59:24 Q. Okay. So, here, the claim says "connected," right?
10:59:33 A. It does.
10:59:34 Q. It does not say "physically connected," correct?
10:59:38 A. It doesn't use those words.
10:59:40 Q. It does not say "directly connected," correct?
10:59:43 A. I agree, it doesn't use those words.
10:59:45 Q. And there's nothing in Judge Gilstrap's claim
10:59:53 construction for this term that would require physical or
10:59:56 direct connection, correct?

10:59:58 A. Not in the claim construction.
11:00:03 Q. And, in fact, the context of this claim is that the
11:00:10 circuits are being separated by an insulation film, and the
11:00:15 whole point of the contact hole is to allow an electrical
11:00:20 connection between the electrode and the transistors,
11:00:26 correct?
11:00:26 A. Yes.
11:00:27 Q. And you agree that T1 and T3 are electrically connected
11:00:35 to the electrode through the contact hole during the
11:00:41 light-emission period, correct?
11:00:42 A. Electrically connected, yes.
11:00:43 Q. Okay. Your second argument had to do with --
11:00:48 MR. FENSTER: You can take that down.
11:00:49 Q. (By Mr. Fenster) Your second argument had to do with
11:00:55 the selection transistor and external elements, right?
11:01:00 A. I wouldn't put it that way --
11:01:03 Q. I'm sorry. External -- external signal, I apologize.
11:01:05 A. That's okay.
11:01:07 Q. Okay.
11:01:07 MR. FENSTER: So if I can have Claim 4, the
11:01:13 elements of Claim 4.
11:01:18 Q. (By Mr. Fenster) Now, selection transistor appears in
11:01:28 Claim 4, right?
11:01:30 A. It does.
11:01:31 Q. Okay. So Claim 4 is dependent on Claim 1, and it adds

11:01:36 additional limitations to Claim 1, right?
11:01:39 A. Yes.
11:01:41 Q. Okay. Selection transistor does not appear anywhere in
11:01:47 Claim 1. Would you agree?
11:01:48 A. I would agree.
11:01:51 Q. In fact, the selection transistor is one of the
11:01:55 additional elements that's added by Claim 4, correct?
11:01:59 A. Yes.
11:02:02 Q. Now, you do not dispute that the Samsung '450 accused
11:02:15 products meet all the additional elements of Claim 4 beyond
11:02:20 the fact that it is dependent on Claim 1, correct?
11:02:23 A. I'm not sure I understand your question.
11:02:35 Q. You do not dispute that the accused products meet all
11:02:47 of the additional elements that are added by Claim 4, other
11:02:54 than the fact that they are dependent upon Claim 1,
11:03:04 correct?
11:03:04 A. No.
11:03:05 Q. That is different than your previous sworn testimony at
11:03:12 your deposition, isn't it?
11:03:13 A. Maybe I should clarify. I do not agree with your
11:03:16 previous statement. I do not believe that all the other
11:03:20 claim limitations are met. However, I've not discussed
11:03:23 them in these proceedings.
11:03:25 Q. You're changing your testimony. The way you've
11:03:32 testified here today is different than your previous sworn

testimony, correct?
A. Yes.
Q. At your deposition, you testified under oath, just like you're under oath here, that you have not rendered an opinion to dispute the additional elements of Claim 4 beyond the fact that it is dependent on Claim 1.
You testified to that in your deposition, correct?
A. I don't recall.
MR. FENSTER: Can we pull up Demonstrative 12, please?
Q. (By Mr. Fenster) This is from your deposition at Page 55, Lines 11 through 22.
You were asked:
Question: And so am I right that you don't dispute that the '450 Samsung accused products satisfy the additional words of Claim 4 here on Column 18, Lines, let's say, 11 through 18, fair?
And I started on Claim 11, to be clear, with the words "said active elements."
And what he was referring to are the elements of Claim 4 that are shown on the left, right?
A. Yes.
Q. Okay. And you answered -- okay. I'm just reading it.
Answer: So I've not rendered an opinion to dispute the additional elements of Claim 4 beyond the fact

that it's dependent upon Claim 1.

That was your testimony, correct?

A. Yes.

Q. And you're telling a different story here today, aren't you?

A. I don't think so.

Q. Well, we've established that selection -- you're -- you -- you're disputing selection transistor here today, right?

A. Yes.

Q. We established that selection transistor is one of the additional elements that is only added in Claim 4, right?

A. It's defined in Claim 4.

Q. All right. So let's go through what you did present today.

MR. FENSTER: So let's go to '450 -- I'm sorry, can I bring up Credelle's Slide 219, please?

Q. (By Mr. Fenster) And this is the element that you did discuss today as your second opinion, contrary to your first deposition, right?

A. I don't think I put it that way, but this is the element I described today.

Q. Fair enough.

Okay. So just to orient the -- okay.

So this says "the display apparatus." And it

says: Wherein said active elements are a selection transistor which is turned on in response to an externally supplied address signal.

Right.

A. That's correct.

Q. And Mr. Credelle testified that T3 is the selection transistor that meets this limitation, correct?

A. Yes.

Q. And you agree that all of the accused products have T3 and that T3 is turned on in response to an externally supplied address signal, just like the claim requires, right?

A. I agree.

MR. FENSTER: Now, if I can have Slide 2 -- Credelle Slide 220, please.

Q. (By Mr. Fenster) Okay. So Claim 4 talks about a drive transistor which is driven by a signal corresponding to image data supplied externally through said selection transistor, right?

A. It does.

Q. And during the data -- and this happens during the data writing period that we've talked about with respect to the Samsung products?

A. Yes.

Q. And during the data writing period, T2 and T3 both

11:08:33 turned on, right?
11:08:34 A. They do.
11:08:34 Q. And the image data signal comes in from this external
11:08:41 data line, right?
11:08:42 A. Yes.
11:08:43 Q. And that signal comes in, and it goes through T2,
11:08:50 right?
11:08:50 A. Yes.
11:08:50 Q. It goes through T -- that same signal -- strike that.
11:08:55 The signal goes from the data line, through T2,
11:09:00 through T1, through, T3 and up to the capacitor, correct?
11:09:09 A. Yes. It also goes to the gate of T1.
11:09:13 Q. Fair enough. And you're referring to this gate right
11:09:16 here, right?
11:09:17 A. Correct.
11:09:19 Q. Okay.
11:09:26 MR. FENSTER: Now, if we can go to Fontecchio
11:09:29 Slide 25.
11:09:35 Q. (By Mr. Fenster) Now, this is what you showed the jury
11:09:38 to make your point to the jury, right?
11:09:42 A. It's one of the things I showed them, yes.
11:09:44 Q. To show them that the image data was not supplied
11:09:48 through the transistor T3, right?
11:09:50 A. Correct.
11:09:50 Q. And you did not show the jury that this data line comes

11:09:55 in, goes through T2, through T1, to -- through T3, and up
11:10:01 to the capacitor and the gate, correct?
11:10:03 A. I think I showed that in a different slide.
11:10:08 Q. You did not show it in connection with this limitation,
11:10:11 did you?
11:10:12 A. Maybe not.
11:10:25 MR. FENSTER: All right. So let's go back to
11:10:27 Slide 220.
11:10:28 Q. (By Mr. Fenster) So you agree that, as shown in the
11:10:52 red line, that that signal that represents the data comes
11:10:59 in from the data line, goes through T2, through T1, through
11:11:04 T3 the selection transistor that Mr. Credelle identified,
11:11:07 before going out to the gate and the capacitor, correct?
11:11:10 A. No. Would you like me to explain?
11:11:20 Q. I think your testimony is inconsistent with what you
11:11:35 just said but --
11:11:37 THE COURT: Counsel.
11:11:37 MR. FENSTER: I'm sorry, I apologize.
11:11:39 THE COURT: That kind of sidebar comment is not
11:11:42 appropriate.
11:11:42 And it's the attorney's decision as to whether to
11:11:46 ask for an explanation or not. If he wants one, he'll ask
11:11:50 for it. If he doesn't, he won't.
11:11:52 Let's move on to the next question.
11:11:55 MR. FENSTER: Yes, Your Honor.

11:11:55 Q. (By Mr. Fenster) You agree that image data is supplied
11:11:57 by the data line, right?
11:11:59 A. Yes.
11:11:59 Q. And you agree that image data is provided as a current
11:12:03 that flows through the circuit as shown in -- by the red
11:12:07 line, correct?
11:12:07 A. No.
11:12:08 Q. You agree that it is supplied as a signal that is
11:12:20 shown -- the path of the signal from the data line is shown
11:12:24 by the red line, right?
11:12:25 A. No.
11:12:27 Q. Okay. All right. Mr. -- Dr. Fontecchio.
11:12:33 Do you dispute that the image data signal goes
11:12:52 through T2, through T1, through T3 and up to the capacitor?
11:12:56 A. I agree with that.
11:12:59 Q. All right. Those are -- those were your two
11:13:07 non-infringement opinions, the only elements that you
11:13:10 challenged with respect to '450, right?
11:13:11 A. Yes.
11:13:13 Q. And you had no other arguments challenging any of the
11:13:17 other elements of the '450, right? You covered them both?
11:13:20 A. Uh-huh.
11:13:21 Q. Okay. So now let's go to your --
11:13:24 THE COURT: Just a minute. Non-verbalized
11:13:27 responses, "uh-huh," won't work for the record. So please

11:13:30 say yes or no.
11:13:32 THE WITNESS: I apologize.
11:13:34 THE COURT: That's all right.
11:13:36 And please speak up a little bit, Mr. Fenster.
11:13:40 MR. FENSTER: Yes, Your Honor.
11:13:40 Q. (By Mr. Fenster) So let's go to your validity opinion
11:13:40 with respect to the '450, okay?
11:13:40 A. Okay.
11:13:41 Q. You are aware that Solas's patents are entitled to a
11:13:45 presumption of validity, correct?
11:13:46 A. Yes.
11:13:46 Q. You're aware that to prove invalidity, invalidity has
11:13:51 to be proven by a higher standard of proof called a clear
11:13:56 and convincing evidence standard, correct?
11:13:57 A. Yes.
11:13:58 Q. Now, you assert that Solas's '450 patent is invalid for
11:14:06 anticipation, correct?
11:14:08 A. Correct.
11:14:08 Q. Meaning that the '450 patent is anticipated by the
11:14:13 Utsugi reference, right?
11:14:15 A. Yes.
11:14:16 Q. And you, Samsung, has the burden of proving
11:14:22 anticipation by clear and convincing evidence for every
11:14:24 single element, correct?
11:14:25 A. Yes.

11:14:25 Q. To meet that burden for anticipation, you have to show
11:14:30 that every element of the asserted claims are either
11:14:35 explicitly or inherently in Utsugi and that the elements
11:14:41 are arranged in Utsugi as in the claim, correct?
11:14:44 A. That's my understanding.
11:14:47 Q. It has to -- and you have no opinion as to inherency,
11:14:54 right? We can take that off the table?
11:14:55 A. I'm not sure. It might play into obviousness.
11:15:02 Q. For anticipation, it has to be either explicit or
11:15:06 inherent, and you did not present any opinion in your
11:15:08 report or today that Utsugi inherently teaches any of the
11:15:12 elements, correct?
11:15:13 A. Right. I think Utsugi is explicit.
11:15:23 Q. Okay. So you have to prove to the jury by clear and
11:15:26 convincing evidence that every single element is explicitly
11:15:29 in Utsugi for anticipation, correct?
11:15:31 A. Yes, and I think I've done that.
11:15:33 Q. If any element of the asserted claims is not explicitly
11:15:39 disclosed in Utsugi, you agree that there's no invalidity
11:15:44 for anticipation, correct?
11:15:45 A. Yes.
11:15:46 Q. Now, you also offered an obviousness opinion in this
11:15:50 case, but only with respect to one element, Element [1c],
11:15:54 right?
11:15:54 A. Yes.

11:15:54 Q. So for all of the other elements, including
11:15:59 Element [1d], you only have an anticipation opinion,
11:16:04 correct?
11:16:04 A. I believe so.
11:16:09 Q. You have no back-up plan. If it doesn't anticipate,
11:16:12 you've got no obviousness back-up, catchall, or anything
11:16:17 like that for other elements, including Element [1d],
11:16:20 right?
11:16:20 A. I think it's pretty explicit. It meets anticipation.
11:16:23 Q. Can you answer my question, sir? You have no back-up
11:16:25 plan --
11:16:26 THE COURT: Counsel, if you think the witness's
11:16:28 answer was non-responsive, raise it with the Court. Don't
11:16:30 redirect the witness.
11:16:31 MR. FENSTER: Thank you, Your Honor.
11:16:33 THE COURT: And, Dr. Fontecchio, you need to
11:16:35 answer the questions as presented. And you don't need to
11:16:38 insert anything that the question doesn't call for in your
11:16:41 answer. Understood?
11:16:42 THE WITNESS: Yes, sir.
11:16:43 THE COURT: All right. Let's proceed, gentlemen.
11:16:44 Q. (By Mr. Fenster) So, Dr. Fontecchio, it is true that
11:16:48 you have -- your only opinion for anticipate -- for
11:16:52 Element [1d] is anticipation, correct?
11:16:58 A. Yes.

11:16:58 Q. You have no back-up plan, no catchall, no obviousness
11:17:02 for [1d], right?
11:17:03 A. I wouldn't put it that way.
11:17:06 Q. If the jury finds that you did not meet your burden by
11:17:15 clear and convincing evidence of proving every element of
11:17:18 Element [1d], the patent will not be invalid for
11:17:20 anticipation, correct?
11:17:21 A. Correct.
11:17:23 Q. And it wouldn't be invalid for obviousness either
11:17:27 because that element would be missing, correct?
11:17:30 A. I guess so.
11:17:32 Q. Okay. All right. Element [1c] --
11:18:00 MR. FENSTER: Can I have the '450 patent,
11:18:02 Element [1c]? Thank you.
11:18:14 Q. (By Mr. Fenster) So Element [1c] requires an
11:18:19 insulation film formed over said substrate so as to cover
11:18:24 said active elements, right?
11:18:27 A. It does.
11:18:28 Q. Said active elements is plural, right?
11:18:31 A. It is.
11:18:32 Q. And those active elements are both the selection
11:18:39 transistor and the driving transistor, correct?
11:18:41 A. Not according to this limitation, but, yes.
11:18:46 Q. So you agree that the -- this element requires covering
11:19:02 two active elements, right?

11:19:04 A. Yes.
11:19:05 Q. Okay. And the only active elements that you've mapped
11:19:08 to are Q_s and Q_I in Utsugi, right?
11:19:13 A. Yes.
11:19:13 Q. You would agree that to meet -- to show the jury that
11:19:17 this element -- element is met, you have to show that
11:19:21 Utsugi expressly describes the insulation layer covering
11:19:27 both Q_s and Q_I, correct?
11:19:31 A. Yes.
11:19:38 Q. Okay.
11:19:38 MR. FENSTER: Now, can we bring up DDX-6.033?
11:19:42 Q. (By Mr. Fenster) This is the slide that you showed the
11:19:50 jury for anticipation of Element [1c], correct?
11:19:59 A. Yes.
11:19:59 Q. This is the only element -- the only slide that you
11:20:04 showed to show evidence that [1c] is met for anticipation,
11:20:08 correct?
11:20:08 A. No.
11:20:17 Q. For anticipation?
11:20:21 A. No.
11:20:21 Q. Okay. Other than your model, these are the only
11:20:29 portions of Utsugi that you identified in your direct
11:20:33 examination as meeting the elements of [1c] for
11:20:36 anticipation, correct?
11:20:37 A. Yes.

11:20:38 Q. Got it. Okay. So we'll come back to your model in a
11:20:42 minute.
11:20:42 A. Okay.
11:20:42 Q. There is no -- so to meet Element [1c], you have to
11:20:50 show that Utsugi expressly discloses that the insulation
11:20:56 layer covers both Q_s and Q_I, right?
11:21:01 A. Correct.
11:21:01 Q. There is no figure in Utsugi that shows the insulation
11:21:07 layer covering Q_s, correct?
11:21:10 A. Correct.
11:21:11 Q. 5 -- you showed Figure 5 on your slide. And Figure 5
11:21:18 does not show the Q_s transistor at all, correct?
11:21:22 A. Figure 5 does not.
11:21:24 Q. So Figure 5 does not show explicitly the insulation
11:21:27 layer over Q_s, correct?
11:21:30 A. Figure 5 does not.
11:21:32 Q. Okay.
11:21:33 MR. FENSTER: Can we put a red X over that?
11:21:38 Q. (By Mr. Fenster) Now, let's look at the -- let's look
11:21:45 at the text that you cited from Utsugi.
11:21:47 That's on the left in the lower left-hand box,
11:21:52 right?
11:21:52 A. Okay.
11:21:52 Q. And you quote one sentence from Utsugi, correct?
11:21:57 A. Yes.

11:21:58 Q. And that sentence does not mention Q_s at all, right?
11:22:04 A. Not that sentence, no.
11:22:10 Q. This is the only sentence you showed the jury for
11:22:13 anticipation, right?
11:22:14 A. No.
11:22:23 Q. This sentence on your slide does not explicitly
11:22:28 describe the insulation layer covering Q_s, correct?
11:22:32 A. I think it does. Would you like me to explain?
11:22:37 Q. The word transistor Q_s is not mentioned in this
11:22:43 sentence on the left, correct? Q_I is, but not Q_s?
11:22:49 A. That's correct.
11:22:50 THE COURT: And one more time, Dr. Fontecchio, the
11:22:53 lawyers will decide which witnesses and in which context
11:22:57 they want to ask for an explanation. You don't need to
11:23:00 keep offering it. If he wants you to explain, he'll ask
11:23:04 you to explain. If he chooses not to, he won't. But it's
11:23:08 his decision, it's not yours, and you don't need to
11:23:11 continue to offer. Understood?
11:23:14 THE WITNESS: Understood.
11:23:15 THE COURT: All right. Let's proceed.
11:23:16 Q. (By Mr. Fenster) Q_s is not shown in that sentence,
11:23:18 correct?
11:23:18 A. Correct.
11:23:20 Q. Okay. Let's go on to Element [1d], okay?
11:23:32 Now, Element [1d] requires at least one electrode

formed on the insulation to cover the active elements and connected to said active elements.

MR. FENSTER: Can you highlight "connected to said active elements," please?

Q. (By Mr. Fenster) And as you've mapped the claim, this requires showing that the electrode is connected to both Q_s and Q_I, correct?

A. Yes.

Q. Through the contact hole, correct?

A. Yes.

Q. To show anticipation, you have to show to the jury by clear and convincing evidence that Utsugi expressly discloses connecting the electrode to both Q_I and Q_s through that electric -- the contact hole, correct?

A. No.

Q. Said active elements in this Element [1d] are the same said active elements that were in [1c], right?

A. They are.

Q. And the said active elements that you are pointing to -- mapping to are both Q_I and Q_s, correct?

A. That's correct.

Q. And the Claim Element [1d] requires that the electrode be connected to said active elements that you've mapped to both Q_I and Q_s through the contact hole, correct?

A. No.

11:25:48 MR. FENSTER: Let's bring up DDX-6.058. Oh, I'm
11:25:59 sorry, 35, my apologies. Changed the numbering.
11:26:05 Q. (By Mr. Fenster) Okay. So this is the slide that you
11:26:07 presented for Element [1d] for anticipation, correct?
11:26:13 A. Yes.
11:26:13 Q. And these are the disclosures from Utsugi that you
11:26:18 relied on to show the jury to show that the electrode is
11:26:23 connected to said active elements to meet Element [1d],
11:26:28 correct?
11:26:28 A. Yes.
11:26:28 Q. Okay. Now, Figure 5 on the right doesn't show Q_s at
11:26:36 all, correct?
11:26:36 A. Correct.
11:26:38 Q. So you would agree with me that Figure 5 does not
11:26:42 explicitly show the electrode connected to Q_s through the
11:26:47 contact hole, fair?
11:26:48 A. I agree.
11:26:49 Q. Okay. Now, here, you've quoted two sentences from
11:26:54 Utsugi. Let's look at the first one first.
11:26:58 In the middle box, this is the sentence from
11:27:07 Column 7, Lines 46 through 52, correct?
11:27:12 A. Yes.
11:27:12 Q. And that sentence does not mention Q_s at all, correct?
11:27:17 A. It does not.
11:27:20 Q. And the next box that you showed, it's showing a

11:27:27 sentence from Column 6, Lines 23 through 27, correct?
11:27:33 A. Yes.
11:27:33 Q. And that sentence doesn't mention the electrode
11:27:37 connecting to anything at all, right? Doesn't even mention
11:27:44 electrode.
11:27:44 A. It does not mention electrode.
11:27:46 Q. This is talking about the luminescent layer covering
11:27:52 the transistors, right?
11:27:53 A. It is.
11:27:55 Q. And, Dr. Fontecchio, you agree that if the jury finds
11:28:05 that you failed to prove by clear and convincing evidence
11:28:10 that Utsugi explicitly discloses the elements, all of the
11:28:16 claim language of [1d], that the asserted claims are not
11:28:20 invalid for anticipation, correct?
11:28:22 A. Correct.
11:28:23 Q. And they would not be invalid for obviousness either,
11:28:33 correct? Because you have -- you have no -- you had no
11:28:36 element -- strike that. I'll withdraw it.
11:28:37 If the jury finds that you did not prove by clear
11:28:43 and convincing evidence that [1d] is met by anticipation,
11:28:48 you have no other opinion -- you've offered no other
11:28:50 opinion with respect to [1d], correct?
11:28:52 A. That's correct.
11:28:53 Q. And for obviousness, you have to show that [1d] is met,
11:28:57 as well as all of the other elements, correct?

11:28:59 A. Yes.
11:29:04 Q. Okay. All right.
11:29:05 MR. FENSTER: Let's go to the model.
11:29:11 Q. (By Mr. Fenster) So you showed a model to try to
11:29:15 address the obviousness -- obvious question -- obviousness
11:29:21 question for Element [1c], correct?
11:29:24 A. Yes.
11:29:24 Q. Now, for anticipation, you have to show that a single
11:29:28 reference explicitly teaches every element from within the
11:29:32 four corners of that document, right?
11:29:34 A. I do.
11:29:35 Q. For anticipation, it would be absolutely improper to
11:29:41 rely on anything outside the four corners of the single
11:29:45 prior art reference that you're asserting for anticipation,
11:30:00 correct?
11:30:00 A. I would say no.
11:30:02 Q. Now, none of the figures in your model -- that model is
11:30:13 something you created, right?
11:30:14 A. I created the model, yes.
11:30:15 Q. Those figures that you made up in your model are not
11:30:18 figures from Utsugi, right?
11:30:19 A. Correct.
11:30:20 Q. None of those figures are in Utsugi, right?
11:30:27 A. Right.
11:30:28 Q. Now, you prepared a report --

11:30:30 A. Actually, no, I have to say no to that.
11:30:32 Q. You're right. There was one cross-section that you had in your model slides; is that what you're referring to?
11:30:35 A. Yes, it is.
11:30:37 Q. Fair enough.
11:30:38 Now, in your report -- you had to prepare a report to disclose all of your invalidity opinions for Solas for fair disclosure, right?
11:30:39 A. I did.
11:30:49 Q. And that model that you showed the jury today, that was the first time we've seen it, right?
11:30:50 Let me -- let me withdraw it.
11:30:50 You did not include that in your report, did you?
11:30:58 A. Correct.
11:31:02 Q. And there is no figure in Utsugi that expressly discloses the insulation layer covering Q_s, correct?
11:31:05 A. There is not a figure.
11:31:05 Q. And there is no figure that explicitly discloses the electrode connected to Q_s through the contact hole, correct?
11:31:12 A. That's correct, there is not a figure that shows that.
11:31:18 Q. Now, you also made a point in connection with your obviousness -- or with your invalidity opinion to tell the jury that Utsugi was not before the Patent Office, that the Patent Office had not seen that reference before. Do you
11:31:19
11:31:24
11:31:28
11:31:28
11:31:32
11:31:36
11:31:39
11:31:43

recall that?
A. I do.
Q. For validity, it is also relevant -- strike that.
The Patent Office did consider prior art in examining the '450 patent, correct?
A. Yes, they did.
MR. FENSTER: Can we bring up the '450 patent, the face cover? And can you show the --
Q. (By Mr. Fenster) Do you see this "References Cited"?
A. I do.
Q. Okay. Those are the references that the Patent Office examined in connection with examining the '450 patent to determine whether it meets the requirements for patentability, right?
A. Yes.
Q. And the Patent Office reviewed all of these patents, correct?
A. Correct.
Q. Now, on direct examination, you offered no analysis or opinions to the jury comparing Utsugi to any of those prior art references that the Patent Office did look at, did you?
A. No, I didn't.
Q. So you didn't offer any analysis or opinion to the jury trying to tell them that Utsugi disclosed something different or something more than the prior art that the

11:33:19 Patent Office did look at, correct?
11:33:23 MR. FRISCH: Objection, Your Honor. This is
11:33:24 calling for an improper analysis.
11:33:27 THE COURT: Overruled.
11:33:30 You can answer the question.
11:33:31 A. I did not offer that testimony.
11:33:33 Q. (By Mr. Fenster) And the Patent Office, after
11:33:37 examining all of the prior art listed on the screen here
11:33:41 and listed on the face of the '450 patent, determined that
11:33:46 the '450 patent was valid, it was new, it was non-obvious,
11:33:50 and it met all of the requirements for patentability.
11:33:53 Correct?
11:33:53 A. They issued the patent, so I assume so.
11:33:57 Q. We're now going to turn to the '338 patent.
11:34:03 MR. FENSTER: And, Your Honor, at this time, I
11:34:04 would be getting into confidential material. I'm going to
11:34:07 ask that you seal the courtroom.
11:34:09 THE COURT: All right. Based on that request and
11:34:11 representation, I'll order the courtroom sealed at this
11:34:14 time.
11:34:14 Those present who are not subject to the
11:34:17 protective order that's been entered in this case should
11:34:21 excuse themselves and remain outside until the courtroom is
11:34:24 reopened and unsealed.
11:34:26 (Courtroom sealed.)

(This portion of the transcript is sealed and filed under separate cover as Sealed Portion No. 15.)

(Courtroom unsealed.)

THE COURT: Ladies and gentlemen, we're about to break for lunch. I'm going to ask you, consistent with what we've done throughout the trial, to take your notebooks with you to the jury room during the lunch hour. I'm informed by the clerk's office your lunch should be ready there.

Please follow all the instructions I've given you throughout your -- throughout the trial regarding your conduct, including, of course, not to discuss the case among each other or with anyone else.

And with that, we'll try to reconvene as close to 1:00 o'clock as possible.

The jury is excused for lunch at this time.

COURT SECURITY OFFICER: All rise.

(Jury out.)

THE COURT: Counsel, for your information, we've used 3 hours and almost 5 minutes today so far.

Allocating that between the parties, the Plaintiffs have 3 hours and 6 minutes remaining.

And the Defendants have 4 hours and 38 minutes remaining.

12:03:10 With that, the Court stands in recess.
12:03:15 COURT SECURITY OFFICER: All rise.
12:03:16 (Recess.)
12:03:18 (Jury out.)
12:03:18 COURT SECURITY OFFICER: All rise.
12:03:18 THE COURT: Be seated, please.
01:07:04 Mr. Fenster, are you prepared to continue with your cross-examination?
01:07:18 MR. FENSTER: I am, Your Honor, and it will remain under seal for the short remainder of the cross.
01:07:22 THE COURT: Once the jury is in the box, if you'll ask me to seal the courtroom because we're unsealed at the moment.
01:07:27 MR. FENSTER: Thank you.
01:07:28 THE COURT: All right. Let's bring in the jury, please.
01:07:32 COURT SECURITY OFFICER: All rise.
01:07:33 (Jury in.)
01:08:00 THE COURT: Welcome back from lunch, ladies and gentlemen. Please have a seat.
01:08:06 We'll continue with the cross-examination of Dr. Adam Fontecchio by the Plaintiff.
01:08:08 Mr. Fenster, you may proceed.
01:08:16 MR. FENSTER: Thank you, Your Honor.
01:08:18 And, Your Honor, may I ask that the courtroom be
01:08:20

resealed at this time?

THE COURT: All right. Based on that request, the Court's going to order the courtroom sealed. Those of you that are present not subject to the protective order in this case should exit the courtroom and remain outside until it's reopened and unsealed.

(Courtroom sealed.)

(This portion of the transcript is sealed. and filed under separate cover as Sealed Portion No. 16.)

(Courtroom unsealed.)

THE COURT: All right. Mr. Frisch, you may continue.

Q. (By Mr. Frisch) Dr. Fontecchio, did the Patent and Trademark Office have the benefit of looking at Utsugi when it issued the '450 patent?

A. No, it did not.

MR. FRISCH: Mr. Beall, can you pull up Demonstrative 6.035?

Q. (By Mr. Frisch) And, Dr. Fontecchio, do you remember being asked a number of questions about Claim [1d] of the '450 patent and specifically if it was disclosed by Utsugi?

A. Yes.

Q. And can you explain, again, why you believe that Claim Element [1d] is disclosed by Utsugi?

01:52:26 A. Yes. Because the text from Column 7 and 8 inside
01:52:31 Utsugi, that teaches you how to make the circuit that is
01:52:33 demonstrated in Figure 5, explains the process of --
01:52:37 MR. FENSTER: Objection, Your Honor.
01:52:38 THE COURT: Just a moment. What's the objection?
01:52:40 MR. FENSTER: This is beyond the scope of his
01:52:43 report. On direct, he testified, consistent with his
01:52:46 report, that the Utsugi describes the electrode connected
01:52:51 to Q_1, the transistor, singular, which is what he said on
01:52:56 direct. That's consistent with his report.
01:52:58 He had no discussion in connection with
01:53:01 Element [1d] in his report about the method of manufacture
01:53:07 or anything like that, and there is no obviousness opinion
01:53:09 with respect to [1d].
01:53:11 This is going beyond the scope of his report,
01:53:13 Your Honor.
01:53:13 THE COURT: Mr. Frisch, response?
01:53:15 MR. FRISCH: Your Honor, my question was how he
01:53:17 believes Claim [1d] is disclosed by Utsugi. I didn't ask,
01:53:21 to be honest, anything related to what Mr. Fenster just
01:53:25 said.
01:53:25 MR. FENSTER: His answer was going into that, and
01:53:28 the disclosures that he relies on in his report are
01:53:32 limited -- this is the sum total of the disclosures that
01:53:34 are from Utsugi that he describes in his report in

connection with [1d].

THE COURT: Well, it's clear to the Court that we've all seen this before. We saw it on direct, and now we're seeing it on redirect.

Given that it's being offered by the Defendants again through redirect, the testimony should be the same as it was on direct.

It's your choice as to whether to go over the same ground again or to show the jury something they haven't seen before. But if you're going to show them what they've seen before, it needs to be the same picture, it needs to be the same position, it needs to say the same thing.

MR. FENSTER: I'm not objecting to the slide. The slide is --

THE COURT: I understand that, counsel. You're objecting to what the witness's testimony would be.

MR. FENSTER: Yes.

THE COURT: He needs to testify consistent with the way he testified when this was presented to him before.

Now, as is somewhat your tendency, Mr. Fenster, you're up on your feet before he's said the thing you're afraid he's going to say. He's beginning to get there. I don't know that he's completely there or not.

MR. FENSTER: His answer was getting into it, Your Honor. His answer was getting into based on how it's

made, as opposed to the specific disclosures.

THE COURT: Just a minute. This is not a round-robin discussion. It's a legal objection to a question in the middle of a redirect examination.

I'm going to overrule the objection. But I'm instructing Mr. Frisch and the witness that the testimony should be in all respects what it was previously with regard to this topic and this chart, okay?

MR. FENSTER: Okay.

MR. FRISCH: Understood, Your Honor.

THE COURT: I don't expect any substantive differences. If there are, then I expect I'll hear about it from the Plaintiff.

Let's proceed.

MR. FRISCH: Thank you, Your Honor.

Q. (By Mr. Frisch) Dr. Fontecchio, let me ask you a different question. You provided reports in this case that set out your invalidity opinions, right?

A. Yes.

Q. And Mr. Credelle, Solas's expert, he had an opportunity to submit expert reports that countered your opinions, correct?

A. Yes.

Q. And so he had an opportunity to explain reasons why he thought Utsugi, for instance, does not disclose locations

and --

MR. FENSTER: Objection, Your Honor. I may be one question premature. I apologize if I am, but counsel's suggestion is contrary to the burden of proof.

Defendant bears the burden of proof as to invalidity. We do not bear the burden with respect to anticipation.

What he's suggesting -- what he's about to suggest is -- would be contrary to the burden of proof.

THE COURT: Well, that's not an evidence-based objection to the question and the answer. It may run contrary -- if, in fact, that's what it is, it may run contrary to my instructions. It may run contrary to what the law requires as the burden of proof. And to the extent the burden of proof is misstated, that can be dealt with.

I think the Court's made the burden of proof very clear in my instructions to the jury, that the burden of proof for invalidity is on the Defendants by clear and convincing evidence.

And the burden of proof for infringement is on the Plaintiff by a preponderance of the evidence.

And the burden of proof for damages related to infringement is on the Plaintiff by a preponderance of the evidence.

I don't want any testimony that contradicts the

01:57:08 Court's instructions to the jury on the burden of proof.

01:57:15 But the problem, Mr. Fenster, is you're seeing --

01:57:20 you're seeing the question and the answer as something

01:57:23 other than a direct statement contrary to the burden of

01:57:36 proof. And I've reiterated what the burden of proof is for

01:57:39 the jury.

01:57:39 I'm going to allow the examination. You can

01:57:41 address anything of this nature that you believe needs to

01:57:44 be addressed in additional cross-examination, but we're not

01:57:49 going to have a law school discussion in the middle of the

01:57:52 examination about what's proper and what's not proper.

01:57:57 If there is an objection based on the Rules of

01:58:00 Evidence, based on the limine orders that I have entered,

01:58:05 based on the matters set forth in the pre-trial conference,

01:58:07 raise it. But if you don't like the substance of it

01:58:10 because you think it's confusing, that's what you address

01:58:12 on cross-examination again.

01:58:15 All right. Let's proceed.

01:58:16 MR. FRISCH: Thank you, Your Honor.

01:58:17 THE COURT: And see if we can streamline this.

01:58:20 MR. FRISCH: I'm trying, Your Honor.

01:58:22 Q. (By Mr. Frisch) Did -- you know, Dr. Fontecchio, in

01:58:25 your understanding, did Mr. Credelle ever provide an

01:58:28 opinion in this case that Claim Limitation [1d] was not

01:58:33 disclosed by Utsugi?

01:58:35 MR. FENSTER: Objection, Your Honor. Calls for
01:58:37 hearsay.
01:58:42 THE COURT: He's entitled to rely on hearsay as
01:58:44 part of forming his opinion as an expert witness.
01:58:48 Overruled.
01:58:51 He's not to parrot hearsay and be an end-round to
01:58:57 the hearsay rule. But he can certainly consider it a part
01:59:00 of forming his opinions. But he needs to -- he needs to
01:59:04 testify as to what his opinions are.
01:59:06 He can identify the sources of information that
01:59:08 went into those opinions, but he's not to offer direct,
01:59:12 out-of-court statements by third parties.
01:59:16 MR. FENSTER: It's also beyond the scope of his
01:59:18 report, Your Honor. What happened in Mr. Credelle's report
01:59:20 was in response to this. There's been nothing in his
01:59:22 report about what Mr. Credelle said.
01:59:24 THE COURT: All right. Ladies and gentlemen of
01:59:27 the jury, it appears to me I need to have a discussion with
01:59:31 counsel that goes further than what we've already
01:59:33 discussed.
01:59:34 I'm going to do this outside your presence. I'm
01:59:38 going to ask you to retire to the jury room.
01:59:40 I'm going to ask you to leave your notebooks in
01:59:42 your chairs, follow all the rules I've given you about your
01:59:45 conduct, including not to discuss the case with each other,

and I hope to have you back in here shortly so that we can go forward from there.

The jury is excused to the jury room at this time.

COURT SECURITY OFFICER: All rise.

(Jury out.)

THE COURT: Be seated.

Mr. Fenster, we need to get something straight. This is not an opportunity for you to stand up and make a speech to the jury on a repetitive basis, and that's what we are evolving into, and that's not fair, and I'm not going to allow it.

If you have a concise, succinct objection that you can give me in a matter of one sentence or a few words that relates to the Rules of Evidence, the Rules of Procedure, my rulings in the pre-trial conference, including my limine orders, you can certainly make it. And I will get a response from opposing counsel in as equally a succinct manner, and I will give you a ruling.

But this is not a platform for you to get up in the middle of Mr. Frisch's redirect and give a speech to the jury. And that's going to stop.

MR. FENSTER: I understand.

THE COURT: If it continues, I'm going to penalize you.

And, Mr. Frisch, we're just seeing your direct

recycled over and over and over again. I don't know of any rule that prohibits you from doing that, but part of the problem we're having is that the same material is being put up before the same witness, and I think there's an anxiety on the Plaintiff's part that he's going to try and say something differently the second time than he said the first time. And if that's where you're headed, you know, that's not where we need to go.

MR. FRISCH: If I may, Your Honor. That's not at all what I'm trying to do here.

THE COURT: Redirect is not meant to be an opportunity to replow the same exact ground in the same exact way with the same exact witness. It's meant to bring additional information to the jury.

MR. FRISCH: There were implications during the questioning about whether or not certain elements had been shown. And so I was going back --

THE COURT: You need to focus on those areas of difference and not start at the beginning of the issue and work all the way through the steps that are not in dispute or are not in a different posture.

MR. FRISCH: Yes, Your Honor.

MR. FENSTER: Your Honor, I really am so sorry. But I -- this is important, and I am -- it is improper for them to ask Dr. Fontecchio what Mr. Credelle said in order

to raise the implication that Solas somehow admitted [1d] by not challenging it in their report. And that -- there is no evidence that there's been an admission, and that is deeply prejudicial --

THE COURT: And you can deal with that on additional cross-examination. He is entitled as an expert witness to rely on hearsay information.

MR. FENSTER: But there is no hearsay -- he -- there is no -- what they're trying to establish by the hearsay, Your Honor, is just that we didn't challenge it, and, therefore, he should assume that it's admitted and that meets their burden of proof.

THE COURT: And if you can't deal with it now, that's why the rules allow you to call rebuttal witnesses, and you can call Mr. Credelle in rebuttal.

But I'm not going to keep the man from testifying. And unless he goes outside the bounds of his report in a clear or substantive way or unless the question is improper and I get the kind of objection I've made clear, I'm not going to -- I'm not going to circumscribe this process any further.

They're entitled to put their case on to the jury just as you are. And you're -- in my view, you're asking me to edit their redirect as they go, and I'm not going to do that. And these continual speeches to the jury from you

are not welcomed by the Court.

MR. FENSTER: Understood.

THE COURT: And I don't want any more of them.

MR. FENSTER: Understood.

THE COURT: And if you want to have time to have a rebuttal case, then don't do that anymore, or you won't have enough time to have a rebuttal case, if you understand where I'm headed.

MR. FENSTER: I do.

THE COURT: Now, is there anything else either of you gentlemen are unsure or unclear on about how the Court expects this witness's continuing examination to go forward before I bring the jury back in?

MR. FRISCH: No, Your Honor.

THE COURT: I'm going to charge this time the jury has been out of the room to the Plaintiff because I feel like Mr. Fenster's jury speeches are the largest part of why they're there -- or why they've had to be sent out.

All right. Let's bring the jury back in.

COURT SECURITY OFFICER: All rise.

(Jury in.)

THE COURT: Be seated, please.

Thank you, ladies and gentlemen, for your indulgence. We'll proceed with the redirect examination of the witness by the Defendants.

Continue, Mr. Frisch.

MR. FRISCH: Yes, Your Honor.

Q. (By Mr. Frisch) I believe, Dr. Fontecchio, I had just asked you the question of whether in your understanding Mr. Credelle had ever said that he disagreed with your opinion with respect to Claim [1d]?

A. In my understanding, he has not.

Q. Now, I'd like to talk about your opinion with respect to [1c], the insulation layer over the transistors?

A. Yes.

Q. With respect to that opinion, are you only relying on the figures of Utsugi?

A. No, I am not. I'm also relying on the text.

Q. And what is it about the text that also informed your opinion?

A. It describes the growing of the insulation layer, which is a term that's common in micro-manufacturing to mean that it's grown over the entire surface.

In addition, the manufacturing steps that are in the text explain to you how to go about putting the insulation layer down so that it covers all of the transistors.

MR. FRISCH: I pass the witness, Your Honor.

THE COURT: Additional cross-examination?

MR. FENSTER: Yes, Your Honor.

02:08:01 THE COURT: Let's proceed.

RECROSS-EXAMINATION

BY MR. FENSTER:

Q. Dr. Fontecchio, the Defendant, Samsung, has the burden of proof of proving every single element by clear and convincing evidence for invalidity, correct?

A. Yes.

Q. And if the Defendant fails to meet that proof, we don't have to respond, correct?

A. I guess not.

Q. Okay. Now, you were here -- you were here for opening statements, right?

A. I was.

Q. And during the opening statements, both counsel had the opportunity to tell the jury what we expect the evidence to show and what we think we'll be able to prove, right?

A. Yes.

Q. And during the opening statement, Mr. Haslam did not even mention invalidity of the '450 or Utsugi, did he?

A. I don't recall.

MR. FENSTER: Pass the witness, Your Honor.

THE COURT: All right. Further redirect examination?

MR. FRISCH: No further questions, Your Honor.

THE COURT: All right. In that case,

Dr. Fontecchio, you may step down.

THE WITNESS: Thank you, Your Honor.

Should I take the book with me?

THE COURT: Leave it there, please.

THE WITNESS: Okay.

THE COURT: Defendants, are you prepared to call your next witness?

MR. HASLAM: Yes, we are.

THE COURT: Call your next witness then.

MR. HASLAM: Call Dr. Konstantinos Sierros.

THE COURT: Dr. Sierros, if you'll come forward and be sworn by the courtroom deputy, please.

(Witness sworn.)

THE COURT: Please come around, sir, have a seat on the witness stand.

MR. HASLAM: Your Honor, may I have permission to pass out the binders?

THE COURT: Yes.

MR. HASLAM: May I give them to the courtroom deputy?

THE COURT: You may.

MR. HASLAM: Three per person.

THE COURT: All right. Mr. Haslam, you may proceed with your direct examination of this witness.

KONSTANTINOS SIERROS, DEFENDANTS' WITNESS, SWORN

DIRECT EXAMINATION

BY MR. HASLAM:

Q. Dr. Konstantinos, can you introduce yourself to the jury the way most witnesses have been doing?

A. Good afternoon. My name is Konstantinos Sierros. I originally come from Greece. I -- after I finished high school, I went to England to do my Bachelor's in mechanical engineering at the University of Newcastle in the north of England.

Then I moved to University of Birmingham. I did my polymers engineering and science at Birmingham, my Master's degree in materials science and then I moved to -- and then --

THE COURT: All right. Just a minute, please, Dr. Sierros. You are going to have to slow way down. You obviously have an accent.

THE WITNESS: I am sorry.

THE COURT: There's nothing wrong with having an accent, but it means you have to talk slower, so those of us who don't speak with the same accent can understand you.

THE WITNESS: I'm sorry.

THE COURT: And if you would pull the microphone a little closer. It's a large courtroom. Everybody in here entitled -- the people on the back row are entitled to hear you. Everyone in here is.

THE WITNESS: I'm sorry, Your Honor.

THE COURT: It's not a problem. We just want to get it straight at the beginning. So please slow down.

THE WITNESS: Yes.

THE COURT: And please speak into the microphone.

Q. (By Mr. Haslam) Is it -- you're a professor at West Virginia University?

A. I'm a professor at West Virginia University and --

Q. What do you teach there?

A. I teach mechanical engineering. And I'm a first-generation college student.

And I teach mechanical engineering to undergraduates and graduate students. And, mainly, I'm teaching mechanics of materials and design. So I teach students how to bend things, how to design new things.

Q. And I think you mentioned that your education was in England?

A. Yes, my education was in England at University of Newcastle. I did my Bachelor in mechanical engineering, and then I moved to Birmingham where I did my Master's in polymers engineering.

And then I did my Ph.D. in -- at the University of Birmingham at the same place in the middle of England -- Midlands, and that was materials science and engineering.

Q. What were the subjects of your Ph.D. theses?

A. In my Ph.D. theses I started the mechanics of flexible films, like the ones that we're discussing here, with films on top of conductive materials like the ITO that you have probably heard so many times in this case.

And I did a lot of testing of them to categorize into properties, how you can look through them, the mechanics of them, like how they bend, how they stretch, and how they are used in different related devices. For example, the touchscreens that we're discussing here.

Q. Okay. Have you done work relating to touchscreens in the past?

A. Yes. So those components that I described to you, those -- the films with ITO, probably you have heard already that they're called flexible electrodes, and those are used in numerous applications. For example, in touchscreens, they're used in flexible lighting, they're used in displays. They're used in many different applications.

THE COURT: Let me ask everybody to pause just a minute, too. One other thing that will help him -- will help, Dr. Sierros, is if you will limit your answers to the questions asked.

He asked if you had done work relating to touchscreens in the past. You said yes. You then proceeded to describe the work that you've done with

touchscreens in the past. You answered the question when you said yes, because that's all that was called for, have you done work on touchscreens in the past?

If you will limit your answers to just the question asked, I'll let Mr. Haslam ask as many questions as he needs to to cover his material, but if we can break this up into shorter answers to more questions instead of longer answers into fewer questions, I'll follow your testimony much better, and I suspect the jury will follow your testimony better as well. So let's try to follow that approach.

THE WITNESS: I'm sorry, again.

THE COURT: That's not a problem. I'm not criticizing. I'm just trying to facilitate clear understanding by the people that need to hear and understand.

Mr. Haslam, please continue.

MR. HASLAM: Yes.

Q. (By Mr. Haslam) Did any of your work deal with metal mesh electrodes?

A. Yes. Around -- yes.

Q. "Yes" was the answer?

A. Yes.

Q. Can you describe briefly the kind of work you've done with respect to metal mesh electrodes?

02:16:12 A. Yes. Around 2010 to 2011 time frame, I was working on
02:16:23 metal meshes for flexible lighting.
02:16:25 Q. Do you have any papers that have been published?
02:16:27 A. I have more than 100 technical publications, including
02:16:32 patents and peer-reviewed articles.
02:16:35 Q. If you could keep your voice up.
02:16:37 How many patents do you have?
02:16:38 A. I have three patents and one patent application.
02:16:41 Q. Are any of your publications peer-reviewed?
02:16:46 A. I have more than 50 peer-reviewed publications.
02:16:50 Q. Can you briefly tell the jury what it means to have a
02:16:53 peer-reviewed publication?
02:16:57 A. So when you have -- as a professional, you have to
02:17:03 publish your work so other scientists and engineers will
02:17:08 read your work and refer to your work. So this is called
02:17:11 peer-reviewed.
02:17:13 So you send your papers out for review, and other
02:17:17 professors, we don't know their name, they review your
02:17:20 work. And then it's a pretty rigorous process; it takes
02:17:25 some time. And this is how -- it's hard work to publish
02:17:30 papers.
02:17:30 Q. Have you done any work with capacitive or resistive
02:17:36 touch sensors?
02:17:36 A. Yes, I have done work with touchscreens, and I have a
02:17:42 few publications.

02:17:44 Q. And do those deal with both capacitive and resistive?
02:17:48 A. No, I have worked mostly with touchscreens, but it's
02:17:53 similar technology.
02:17:54 Q. Are you familiar with capacitive touch sensors?
02:17:57 A. Yes, I am familiar with capacitive touch sensors.
02:18:00 Q. Is this the first time you've served as an expert in
02:18:03 litigation?
02:18:04 A. Yes.
02:18:04 Q. A little nervous?
02:18:05 A. A little bit, yeah.
02:18:07 Q. Okay. Relax. No one's going to bite.
02:18:11 Are you being compensated for your time here?
02:18:14 A. Yes.
02:18:14 Q. What is the rate you're being compensated?
02:18:16 A. $350 per hour.
02:18:21 Q. Is your compensation in any way dependent on the
02:18:23 outcome of the case or on the opinions and testimony that
02:18:27 you provide?
02:18:28 A. No.
02:18:28 Q. Are the opinions and testimony you're going to provide
02:18:34 your own technical opinions?
02:18:36 A. Yes.
02:18:38 MR. HASLAM: Your Honor, we offer Dr. Sierros as
02:18:40 an expert in flexible touch sensor and display technology.
02:18:43 THE COURT: Is there objection?

02:18:44 MR. MIRZAIE: No objection, Your Honor.
02:18:45 THE COURT: Then, without objection, the Court
02:18:48 will recognize this witness as an expert in the designated
02:18:51 fields.
02:18:52 Please proceed.
02:18:54 Q. (By Mr. Haslam) What patent have you been asked to
02:18:57 analyze?
02:18:57 A. The '311 patent.
02:18:58 Q. And that's the touch sensor patent?
02:18:59 A. It is the touch sensor patent.
02:19:00 Q. Okay. Can you tell us what -- just generally, what did
02:19:05 you do to prepare to render the opinions you've given in
02:19:08 this case?
02:19:08 A. I have, of course, written my reports, and I also
02:19:14 reviewed other reports from other experts. I reviewed a
02:19:19 lot of documents. I didn't count the volume, but there
02:19:26 were a lot of -- thousands of pages. And I have also
02:19:34 reviewed deposition transcripts and all the related papers
02:19:38 and documents for this case.
02:19:40 Q. Now, are you aware that the Court, in connection with
02:19:44 prior proceedings before this trial, has interpreted
02:19:49 certain claims -- certain terms in the '311 patent?
02:19:52 A. Yes.
02:19:54 Q. And are you -- did you and will you today use those
02:19:58 constructions in the opinions and testimony you give today?

02:20:03 A. Yes.
02:20:04 Q. Now, you understand that patents are -- infringement
02:20:12 and validity analysis is done from the perspective of a
02:20:15 person of ordinary skill in the art?
02:20:16 A. Correct.
02:20:17 Q. And the person of ordinary skill in the art is a
02:20:23 hypothetical person, right?
02:20:24 A. Correct.
02:20:26 Q. Okay. And what was the definition of a person of
02:20:29 ordinary skill in the art, as you determined it having read
02:20:33 the patent?
02:20:34 A. So person of ordinary skill in the art is a person that
02:20:39 has a Bachelor's degree in electrical engineering, computer
02:20:46 science, or a material science engineering or related --
02:20:49 closely-related field, and two to three years experience in
02:20:54 flexible display sort of screen industry.
02:20:58 Q. Now, you read Mr. Credelle's report in this litigation?
02:21:04 A. Yes.
02:21:05 Q. And you read his definition of a person of ordinary
02:21:09 skill in the art?
02:21:09 A. Yes.
02:21:09 Q. Were there differences between your opinion and his?
02:21:13 A. Correct.
02:21:14 Q. If you applied Mr. Credelle's definition of a person of
02:21:20 ordinary skill in the art, would it change any of the

opinions that you've rendered or will testify to here today?
A. No.
Q. Now, you're aware that the claims that are asserted in the '311 are Claims 7 and 12?
A. Claim 7 and 12, correct.
Q. And have you reached a conclusion as to whether, in your view, the accused products that are accused of infringing Claims 7 and 12, in fact, do infringe those claims?
A. They do not infringe.
Q. And have you reached any conclusions as to whether Claims 7 and 12 are valid or invalid?
A. They're invalid.
Q. Okay. Just briefly, because we've been over a lot of the background here, but how long have touch sensors been around?
A. They were -- since the first touchscreen was demonstrated in the '60s. Then in the '70s, there was some work at Elographics, at the time, Elo TouchSystems now, and they developed resistive touchscreens.

And then in the '80s, 3M -- MicroTouch then, 3M now, developed the capacity technology.

And in the '90s, there were significant developments.

02:22:38 And around 2011, at the time of this -- of the
02:22:47 '311 -- 11 patent, there were capacity touchscreens that
02:22:53 were establishing a major competitor in the industry with
02:23:00 7 billion revenue.
02:23:01 Q. What kind of electrodes could be used in capacitive
02:23:10 touch sensors?
02:23:10 A. There are different types. The first one is --
02:23:16 different generations. They were ITO based, three of them
02:23:19 that we discussed before that I was working with on my
02:23:23 Ph.D. thesis. And then there were different materials,
02:23:26 such as the metal mesh materials. But they were developed
02:23:36 later.
02:23:37 Q. When, to your knowledge, were metal mesh-based sensors
02:23:42 being developed?
02:23:43 A. The first patent was -- that was a published patent, it
02:23:52 was 2009.
02:23:54 Q. And do you recall who that was issued to?
02:23:57 A. That was from a company, 3M. It was one of the largest
02:24:03 companies that were working on touchscreens and it was
02:24:07 Frey.
02:24:08 Q. And was that patent one that the Patent Office
02:24:11 considered in...
02:24:14 A. Yes, it was considered, and it was part of the
02:24:22 prosecution history.
02:24:23 Q. And was it considered by the examiner as prior art?

02:24:27 A. It was considered as prior art.
02:24:29 Q. Does that mean that metal mesh touch sensors existed
02:24:33 prior to the '311 application being filed or the '311
02:24:38 patent being issued?
02:24:39 A. Correct.
02:24:40 MR. HASLAM: Could we have Exhibit 3? Exhibit 3?
02:24:47 Exhibit DTX-3?
02:24:52 Q. (By Mr. Haslam) This is the '311 patent. You see
02:24:59 "References Cited" here?
02:25:00 A. Yes, I see them.
02:25:01 Q. And I see here one to a Mr. Frey on the first page.
02:25:07 A. Yes.
02:25:07 MR. HASLAM: Can we go to the second page?
02:25:09 A. Yes, the first one --
02:25:13 Q. (By Mr. Haslam) And there's another one here in
02:25:15 2009 --
02:25:15 A. Yes.
02:25:15 Q. -- and then I think there is another one here that was
02:25:20 published in 2010.
02:25:23 Is the 2009 Frey patent the one you were referring
02:25:26 to that has the metal mesh?
02:25:27 A. Yes, this is the first one here.
02:25:31 Q. Now, I notice over here on the right-hand side of the
02:25:36 References Cited, there is a Yilmaz reference. Is that the
02:25:42 same Yilmaz who was an inventor on the '311 patent?

02:25:44 A. Yes.
02:25:48 Q. And his prior work can be prior art to the '311 patent?
02:25:54 A. Correct.
02:25:57 Q. And you are rendering an opinion in this case -- you've
02:26:01 rendered an opinion in this case about some obviousness
02:26:06 opinions you have, based on some work that Mr. Yilmaz did
02:26:12 before, combined with another reference.
02:26:15 Is the Yilmaz reference that you're discussing the
02:26:18 one that was cited here?
02:26:20 A. No, this is different.
02:26:22 Q. So the Yilmaz reference you're going to refer to was
02:26:25 not reviewed by the examiner?
02:26:27 A. Correct.
02:26:33 MR. HASLAM: Can we take that down?
02:26:41 Q. (By Mr. Haslam) Okay. Now, the jury's heard a lot
02:26:44 about PET, but -- what is PET?
02:26:51 A. PET stands for polyethylene terephthalate. It's a
02:26:56 polyester. It's -- plastic bottles are made of PET. But
02:27:03 the thinner films, such as used in the touchscreen
02:27:06 technology, is coming as a flexible roll.
02:27:14 Q. And did you, before coming to trial, buy some PET?
02:27:18 A. Yes.
02:27:20 MR. HASLAM: May I hand the witness DDX-5.110?
02:27:39 THE COURT: You may approach the witness.
02:27:43 Q. (By Mr. Haslam) Can you tell us what that is?

02:27:44 A. Yes, so this is a PET film, PET roll. This is what you
02:27:51 used in these touch sensors and where you put the metal
02:27:56 mesh on top. And this is around 125 microns -- oh, this is
02:28:03 105 microns. This is like the human hair, the size of a
02:28:08 human hair.
02:28:09 And as you can see, it's very flexible. You can
02:28:13 wrap it around edges -- sorry, edges, for the jury. And
02:28:20 it's rolled up when it's produced, so it starts from one
02:28:28 roll maybe and it goes all the way, and there's subsequent
02:28:31 processes.
02:28:31 Q. You can put that down.
02:28:40 Okay. We've heard a lot about the '311 patent.
02:28:42 MR. HASLAM: Can we put up the '311, Claim 7?
02:28:53 Q. (By Mr. Haslam) Okay. First, I'm going to ask you if
02:28:58 there are any of these limitations in the claim that -- as
02:29:03 to which you have an opinion that they are not present in
02:29:07 the accused Samsung devices?
02:29:08 A. Yes, there are two.
02:29:11 Q. Can you underline them or point to them?
02:29:15 A. Okay. There's no substantially flexible substrate, and
02:29:23 there's some orientation, but then there's also this last
02:29:28 limitation, configured to wrap around one or more edges of
02:29:32 a display.
02:29:32 Q. Okay. And what is it that's supposed to wrap around
02:29:35 one or more edges of a display?

02:29:37 A. Excuse me?
02:29:38 Q. What is it that is supposed to wrap around?
02:29:41 A. Oh, yes.
02:29:42 Q. One or more edges -- wait.
02:29:45 A. I'm sorry, I'm sorry.
02:29:46 Q. I have to finish my question, and then you answer, and
02:29:49 I won't step on you.
02:29:50 What is it that has to wrap around the one or more
02:29:54 edges of a display?
02:29:55 A. It's a touch sensor, small substantially flexible
02:30:02 substrate.
02:30:02 Q. Okay. Is it this substantially flexible substrate and
02:30:05 the touch sensor?
02:30:05 A. And the touch sensor.
02:30:06 THE COURT: All right. Let's just be real clear.
02:30:12 One person talks at a time.
02:30:13 And, Dr. Sierros, make sure he's finished with his
02:30:18 question before you answer.
02:30:20 And, Mr. Haslam, make sure he's finished with his
02:30:22 answer before you ask the next question.
02:30:25 And it's perfectly fine for counsel to instruct
02:30:27 their witnesses in preparation for their testimony, but not
02:30:32 in the courtroom. If he needs instruction, I'll give him
02:30:35 instruction.
02:30:35 Let's continue.

Q. (By Mr. Haslam) So the -- the substantially flexible substrate and the touch sensor are configured to wrap around one or more edges of the display?
A. Correct.
Q. And is that an element that you believe is present or not present in the accused devices?
A. It's not present.
Q. Does -- does the patent have a figure that is an example that would help you explain how you put together the elements of Claim 7?
A. Yes. If we turn to Figure 7 --
MR. MIRZAIE: Your Honor?
THE COURT: Yes, sir.
MR. MIRZAIE: I object. Counsel is referring to the figure, and his question was, did that help you put the elements of the claims together? So he's doing a direct comparison between the figure and the elements of the claim.
THE COURT: Overruled.
MR. HASLAM: Can we put up Figure 7?
Q. (By Mr. Haslam) Now, I want to be clear, the claim isn't limited to Figure 7; is that right?
A. Yes, it's just an example.
Q. Just an example.
Okay. Using this as an example, can you tell us

what is being shown here in Figure 7? What is Element 601?
A. This is the cover of an mobile phone.
Q. And by cover, what would it typically be?
A. It can be a glass window.
Q. Okay.
A. Like --
Q. And is that an element of the claim, in your opinion?
A. No, it's not.
Q. Okay.
A. So I can --
Q. Where you put a yellow X. If 601 is a cover, that would go on top of what the two surfaces below are, correct?
A. That's correct.
Q. Okay. Now, there's a gray structure just below 601, the cover, and it has on the left side the No. 602 pointing to it. And on the upper right side, it has 612 pointing to what looks like to the top of it.

Can you tell us what is being shown by 602 and 612?
A. Yes. 602 is the substrate -- the substantially flexible substrate that is described in the claim. And 612 is sensor, the metal sensor. And there's some subsequent claims.
Q. Okay. Now, as depicted in Figure 7, the substrate and

02:33:26 the touch sensor have a relatively long, wide top surface,
02:33:34 correct?
02:33:34 A. Correct.
02:33:35 Q. And then it has on the right-hand side of the figure
02:33:40 what appears to be at roughly a right angle, a portion of
02:33:46 it which hangs down perpendicular to the top surface,
02:33:50 correct?
02:33:50 A. Correct.
02:33:51 Q. Okay. And what is being depicted by the fact that
02:33:56 there's a top surface and a side surface?
02:34:00 A. So they're two distinct surfaces. I describe the claim
02:34:11 construction of this particular --
02:34:14 Q. And what do you mean by as shown by -- as described by
02:34:18 the claim construction?
02:34:19 A. So the last limitation of -- in this claim requires
02:34:31 that substantially flexible substrate and the touch sensor
02:34:36 to wrap around one or more cover edge of a display, and
02:34:40 that was construed by the Court to mean to wrap around one
02:34:44 or more intersections between two or more surfaces of a
02:34:49 substrate -- of a display. Sorry.
02:34:51 Q. And is there in Figure 7 an example of how Figure 7
02:35:00 might meet that claim limitation?
02:35:02 A. Yes. So there's an example here because we see the top
02:35:08 surface. So that's one surface. We see the side surface.
02:35:13 So that's -- it's perpendicular in this case. It forms a

sharp edge. And this wraps around the display, which is 613 underneath. So it's required to wrap around a display.
Q. And what are the two surfaces that you see in the flexible substrate and the touch sensor?
A. They're -- can you ask --
Q. What are the -- do you see two surfaces --
A. Yes.
Q. -- in the flexible touch sensor and the -- and the substrate?
A. Yes, they're perpendicular to some, and they have an intersection between them.
Q. And is that where it forms a right angle between the top and the side?
A. Yeah, it forms -- it forms a right angle.
THE COURT: One at a time, please. Make sure he's finished with the question. And make sure he's finished with the answer.
Go ahead, Mr. Haslam.
Q. (By Mr. Haslam) And down at the bottom -- now, I want to talk about the third thing down, 603. What is that?
A. That's a display, and that 603 and 613 is a display.
Q. Does -- is the -- is the display an element of the claim?
A. No, the substantially flexible substrate and the -- with the touch sensor supposed to meet -- they're required

to wrap around the display, but the display is not part of -- is not required by the claim.

MR. HASLAM: Okay. Can we go back now to Claim 7?

Q. (By Mr. Haslam) And so there's a substantially flexible substrate and then a touch sensor, and then the next two limitations talk about the features of the touch sensor, correct?

A. Correct.

Q. They have electrodes, it's configured to bend, it has got a metal mesh, correct?

A. Correct.

Q. And then it's got the substantially flexible substrate and the touch sensor are configured to wrap around one or more edges of the display, correct?

A. Correct.

Q. And now the Atmel devices that were being sold that we've heard about had a flexible substrate and a flexible touch sensor on top of it, correct?

A. Correct.

Q. And that was sold as the flexible touch sensor, correct?

A. Correct.

Q. And Atmel's touch sensor was configured -- could be configured to wrap around the edge of a display, correct?

A. Correct.

02:37:53 Q. But Atmel didn't sell displays, did it?
02:37:59 A. No.
02:37:59 THE COURT: Just a minute. I know this is a
02:38:02 trying situation for defense counsel, but you can't testify
02:38:06 from the podium and just continue to talk and have the
02:38:10 witness say, yes, yes, yes.
02:38:12 I'm going to give you some latitude with regard to
02:38:17 leading, but the last minute or two was a soliloquy. So
02:38:24 you're going to have to ask questions, and he's going to
02:38:27 have to give answers.
02:38:32 Q. (By Mr. Haslam) Did Atmel sell displays?
02:38:35 A. No.
02:38:36 Q. Was Atmel selling the claimed invention?
02:38:39 A. No.
02:38:41 MR. MIRZAIE: Your Honor.
02:38:41 THE COURT: Yes.
02:38:42 MR. MIRZAIE: This -- none of this material was in
02:38:45 the witness's expert reports, either one.
02:38:51 THE COURT: Your objection is that this testimony
02:38:53 which calls for -- or it's calling for testimony beyond the
02:38:58 scope of his report?
02:38:59 MR. MIRZAIE: Correct. We were provided with two
02:39:01 reports from Dr. Sierros, and neither one of them have
02:39:05 anything resembling the substance of this testimony about
02:39:08 what Atmel sold and whether --

MR. HASLAM: I'll withdraw the question and move on.

THE COURT: All right. This witness needs to testify within the four corners of the reports he's generated as an expert witness, and not beyond.

MR. HASLAM: Okay.

Q. (By Mr. Haslam) Now, moving --

MR. HASLAM: We can take that down, please.

Q. (By Mr. Haslam) Moving to the accused devices now, can you just refresh the jury on how Samsung's displays were modified to what they are that are now being accused of infringement?

A. Yes. So there's an evolution of the technology for Samsung. They started with -- they started with external touch sensors, that they were VD basically or ITO, and they were -- they were glued on top of the display, and then assembly with the rest of the patent.

And then they moved to use metal mesh that was integrated -- the touch sensor was a metal mesh touch sensor that was integrated with the display, and that was their latest technology, and this is the accused technology.

Q. Okay.

A. So by that, it would not use anymore. They removed the need for a substrate and the glue, which the substrate is

one of the required -- in this claim, it was one of the limitations.

Q. Now, you're aware that Mr. Credelle has rendered an infringement opinion based on the touch sensor that is on the display and the TFE layer which he refers to the substrate of Claim 7, correct?

A. Correct.

Q. Do you agree with him?

A. No.

MR. HASLAM: Can I have DDX- -- DTX-633?

Q. (By Mr. Haslam) What is this?

A. This is a PDR document for -- this is a PDR document from Samsung. And -- and...

Q. It's a PDR document?

A. Yes.

MR. HASLAM: Can I seal -- request the courtroom to be sealed? I'm going into confidential information.

THE COURT: Based on counsel's request, I'll order the courtroom sealed. I'll direct those present and not subject to the protective order which has been entered in this case to excuse themselves and remain outside the courtroom until it's unsealed and reopened by the Court.

(Courtroom sealed.)

(This portion of the transcript is sealed and filed under separate cover as

Sealed Portion No. 17.)

(Courtroom unsealed.)

THE COURT: Ladies and gentlemen of the jury, if you'll simply leave your notebooks closed and in your chairs, that will be fine. Please follow all the instructions I've given you about your conduct during the trial, including, of course, not to discuss the case among yourselves.

And we'll be back in here shortly to continue with the direct examination of this witness. But the jury is excused for recess at this time.

COURT SECURITY OFFICER: All rise.

(Jury out.)

THE COURT: During this recess, I want Mr. Haslam and Dr. Sierros to have a discussion, not at all about anything related to the substance of this case, but I want you two gentlemen to discuss how you can better coordinate the questions and the answers through the remainder of this direct examination. You're continuing to talk over each other.

Dr. Sierros, you are mumbling a little bit. I am -- I have real concerns about the ability of the jury to follow this testimony. And I think if you two can coordinate the interplay between yourselves and discuss that and only that during the recess, it might be

beneficial.

I understand this is your first time to testify, and I'm not criticizing you, but my job as the presiding Judge in this courtroom is to ensure that the jury hears and receives the evidence that's a part of this trial for both sides of the case, the Plaintiff and the Defendant. And I have real concerns that this is not landing with the jury.

They're free to accept it. They're free to disregard it. But they can't do either if they don't get it, and right now it's not landing at all.

So during this recess, counsel and the witness need to discuss how they can better coordinate the questions and answers in this examination.

And we'll try to be back in 10 or 12 minutes, and we'll continue with the examination of this witness.

If at that time, I need reseal the courtroom, Mr. Haslam, you simply have to ask.

MR. HASLAM: Thank you.

THE COURT: The Court stands in recess.

(Recess.)

(Jury out.)

COURT SECURITY OFFICER: All rise.

THE COURT: Be seated, please.

Mr. Haslam, have you and Dr. Sierros had an

opportunity to talk about how we could proceed with a little less bumpiness in the road?

MR. HASLAM: I have had that discussion.

THE COURT: All right. Are you ready to proceed?

MR. HASLAM: I'm ready to proceed.

THE COURT: Then let's bring in the jury, please.

COURT SECURITY OFFICER: All rise.

(Jury in.)

THE COURT: Please be seated, ladies and gentlemen.

We'll continue with the Defendants' direct examination of Dr. Sierros.

Mr. Haslam, you may continue.

Q. (By Mr. Haslam) I put up DDX-5.019. Can you tell us what's on this screen?

A. So these are three more accused products, Galaxy S10, S20 Plus, and S20 Ultra.

MR. HASLAM: Can I have the courtroom sealed, please?

THE COURT: All right. Based on counsel's request, I'll order the courtroom sealed and direct all present who are not subject to the protective order to excuse themselves and remain outside until the courtroom is reopened and unsealed.

(Courtroom sealed.)

(This portion of the transcript is sealed and filed under separate cover as Sealed Portion No. 18.)

(Courtroom unsealed.)

Q. (By Mr. Haslam) What are we looking at here in --

THE COURT: Just a minute, counsel.

MR. HASLAM: Oh.

THE COURT: Let's let the public get a seat before we go forward.

Now we're unsealed.

Next question, please.

Q. (By Mr. Haslam) What are we looking at in Figure 14?

A. We look at the drive and sense electrodes and the metal mesh structure.

Q. What does Chen describe as the material that makes up the metal mesh -- the mesh?

A. Copper.

Q. Are there any other figures?

A. Figure 21.

Q. Now, you have prepared a slide to help you discuss this?

A. Correct.

MR. HASLAM: Can we have DDX-5.038?

Q. (By Mr. Haslam) Is this a slide that you prepared?

A. This is a slide I prepared and I annotated here. And

04:04:43 this shows the bottom display -- this is a display panel
04:04:50 with red, green, blue light-emitting diodes, the substrate,
04:04:56 the OLED layer and the TFE layer. And this is the
04:05:00 polarizer --
04:05:01 MR. MIRZAIE: Your Honor?
04:05:02 THE COURT: Yes, counsel.
04:05:03 MR. MIRZAIE: This opinion is outside of his
04:05:05 report.
04:05:06 In his report, he had a completely different
04:05:09 opinion on this.
04:05:10 THE COURT: Response?
04:05:12 MR. HASLAM: He relied on this figure, and he's
04:05:15 referred to 82 --
04:05:20 MR. MIRZAIE: Your Honor, I can show you, if I
04:05:22 may, in his report he relied on 82 to map it to the
04:05:27 display, and that's all he relied on.
04:05:33 THE COURT: Ladies and gentlemen of the jury, I
04:05:34 can't address this with you in the courtroom. I'm going to
04:05:37 have to ask you to step into the jury room. I'll have you
04:05:41 back in here as quickly as I can.
04:05:44 Please close and leave your notebooks in the
04:05:46 chairs, please follow all my instructions, including not to
04:05:49 discuss the case, and if you'll bear with me, we'll have
04:05:52 you back in here as soon as possible.
04:05:54 The jury is excused to the jury room.

04:05:56 COURT SECURITY OFFICER: All rise.

04:05:58 (Jury out.)

04:05:58 THE COURT: Be seated, please.

04:06:33 Mr. Mirzaie, it's your objection. If you will, 04:06:43 show me how the witness has testified beyond the scope of 04:06:47 his report.

04:06:48 MR. MIRZAIE: Yes, Your Honor. If I may approach?

04:06:51 THE COURT: I'm going to ask you to go to the 04:06:53 document camera, and whatever you have to show me, put it 04:06:56 on the document camera, that way opposing counsel can see 04:06:59 it at the same time.

04:07:01 MR. MIRZAIE: Sure. And this is --

04:07:06 THE COURT: You don't have to move all your stuff, 04:07:08 Mr. Haslam, just step away, please.

04:07:11 Go ahead.

04:07:11 MR. MIRZAIE: Thank you, Your Honor.

04:07:12 This is Paragraph 147 and 148 of his report.

04:07:27 So on Paragraph 147, it says clearly, contrary to 04:07:40 the testimony he was about to give, that the red, green, 04:07:44 and blue pixels of that light-emitting diode layer 82 04:07:50 correspond to the claimed display.

04:07:54 Nowhere here does it say that the next layer, the 04:07:59 TFE layer, 84, is within the claimed display. This is not 04:08:02 a mistake.

04:08:03 In 148, he clearly says it again.

He equates the display with light-emitting diodes 82, and we can go through the rest of the section. It's not long. Nowhere else does he have the TFE as part of the claimed display. We've never been put on notice on this.

THE COURT: What's the response for Defendants?

MR. HASLAM: Paragraph 152 of the report --

THE COURT: Show it to me, please. Put it on the document camera.

MR. HASLAM: -- is responding to --

THE COURT: Turn it so I can read it, counsel.

MR. HASLAM: -- is responding to their allegation that it contains a touch sensor layered on top of a flexible panel.

THE COURT: Wait a minute.

MR. HASLAM: Oh, sorry.

THE COURT: All right.

MR. HASLAM: And then he goes on: I will address in a later report my opinions on the issue of infringement. However, I note here that this encapsulation layer would be considered to be a substantially flexible substrate in Claims 1 and 7. Then for the same reasons, the thin -- thin-film encapsulation layer in Chen would also be a substantially flexible substrate as required by Claims 1 and 7, in Chen's embodiment in which the metal mesh touch sensor is formed on the thin-film encapsulation layer.

04:09:53 So he did offer an opinion under the construction
04:09:56 that they're proposing, which is the TFE is the substrate
04:10:00 of the claim.
04:10:02 MR. MIRZAIE: Your Honor, if I may?
04:10:04 THE COURT: You may.
04:10:04 MR. MIRZAIE: Your Honor --
04:10:07 Can you leave that there?
04:10:09 MR. HASLAM: Yeah.
04:10:09 MR. MIRZAIE: So a few things about this,
04:10:12 Your Honor. First off, I just showed you the sum total of
04:10:15 his opinions under his application of the claims. This
04:10:19 entire section is about some other application of the
04:10:22 claims under the supposed application that Solas made for
04:10:29 infringement. So already we have a TiVo Federal Circuit
04:10:32 problem.
04:10:33 But the second issue is even within this whole
04:10:36 section, you're not going to see any part of it in which he
04:10:39 says that the claimed display of -- of Chen includes the 84
04:10:45 TFE layer. That -- that is -- that sentence isn't here in
04:10:49 form or in substance, even in this section.
04:10:52 MR. HASLAM: He's going to -- he's going to read
04:10:54 the claim on their reading of the application of the claim
04:11:00 of the accused devices.
04:11:02 MR. MIRZAIE: And --
04:11:03 MR. HASLAM: And that's what -- that's what the

RGB, that's what he referred to as the display and the TFE layer in the display, the substrate as they call it, then Chen shows their substrate.

MR. MIRZAIE: Which is problematic under the TiVo Federal Circuit. He has this other section. But even in this section, there's no words -- and my colleague did not show them to you right now, Your Honor, that the display includes the TFE. That sentence isn't here.

MR. HASLAM: All right. Well, then we'll go back, and we'll -- I'll ask him: If the TFE layer is the substrate, does Chen anticipate? Which is what he put there and what I've shown you.

MR. MIRZAIE: Your Honor --

THE COURT: We're not discussing going back and trying to cure something. We're trying to determine -- I'm trying to determine if this witness has, in response to the question from counsel, testified outside of the scope of his report.

I have made it abundantly clear throughout this case, and we talked about it explicitly at pre-trial, that the expert witnesses are limited and confined to the four corners of their reports.

We talked about this very type of objection being highly disruptive and only being appropriate where there's little or no doubt in the mind of the party raising the

04:12:25 objection, that these were not objections to be offered
04:12:28 flippantly or without serious belief in their merit.
04:12:32 So we're going to answer that question. Whether
04:12:37 there needs to be anything curative or not, will depend on
04:12:41 what the Court's ruling is and what I think may be
04:12:43 necessary.
04:12:45 Do you -- either of you have anything further on
04:12:47 the underlying objection offer?
04:12:49 MR. MIRZAIE: Yes, Your Honor. So in the primary
04:12:56 part of his opinion, the only one in which he purports to
04:13:01 apply the construed claim to the prior art, again, 82 is
04:13:04 his only claim display. And for the substrate, he points
04:13:08 to polarizer layer 92.
04:13:13 And -- and in the section -- in the section that
04:13:18 Mr. Haslam just showed you, he still is pointing to 82
04:13:21 only. He does not change that whatsoever. He just
04:13:27 instead, under an improper TiVo argument, he still points
04:13:32 to 82. He just moves his substrate down to the TFE layer
04:13:36 for the first time.
04:13:38 But the testimony that was about to take place was
04:13:48 the witness expanding his display 82 into layers that he's
04:13:53 never had in his Chen opinions. And, of course, as we know
04:13:56 this whole week, it's because he's got a strict
04:13:59 contradiction on this issue.
04:14:01 This has been a confusing issue for the jury this

whole week, and they need to expand it now not to have a contradiction.

THE COURT: Anything additional, Mr. Haslam?

MR. HASLAM: No.

THE COURT: Give me a minute to look at these paragraphs one more time.

MR. MIRZAIE: Thank you, Your Honor.

THE COURT: While I see the basis of Plaintiff's objection and while I think the particular language in the expert's report is less than crystal clear, it might even be characterized as somewhat lazy, I don't think there's a direct, material deviation from what the Plaintiff has been put on notice of.

Therefore, I'm -- in an abundance of caution, I'm going to overrule the objection, and I'll allow this area of inquiry to go forward.

But, Mr. Haslam, I want to caution you, you may not stray from the ultimate conclusions in this expert's report.

MR. HASLAM: Understood.

THE COURT: All right. Let's take your appropriate places at the bar, counsel.

Let's bring in the jury.

COURT SECURITY OFFICER: All rise.

MR. HASLAM: I apologize.

THE COURT: I'm going to charge this time that's been expended to the Plaintiff.

(Jury in.)

THE COURT: Please be seated.

Thank you again, ladies and gentlemen, for your indulgence.

Are you ready to proceed, counsel?

MR. HASLAM: Yes.

THE COURT: Ask your next question.

MR. HASLAM: Can we put -- can we put up Figure 21 of Chen? Blow that up.

Q. (By Mr. Haslam) Now, you'll see something that's been referred to as R, G, and B. As discussed in your report, what did you -- what did you call that layer?

A. We said that it's the OLED layer with red, green, and blue LEDs.

Q. And what is 84?

A. 84 is the TFE layer --

Q. And what is 90 --

A. -- of encapsulation.

Q. What is 90?

A. It's an adhesive --

THE COURT: Just a minute. Dr. Sierros, he's trying to ask you questions one at a time. Let him ask the question, answer it. Let me him ask the next question.

THE WITNESS: I'm sorry.
THE COURT: Allow him to walk you through this rather than to launch into a narrative about it, all right?
THE WITNESS: Yes.
THE COURT: Go ahead, counsel.
Q. (By Mr. Haslam) What is 90?
A. 90 is an adhesive.
Q. What is 92?
A. 92 is a polarizer.
Q. And what is 44?
A. 44 is the electrode, the touch electrode.
Q. The what?
A. This is the electrode.
Q. Is that the touch sensor?
A. The touch sensor, yeah, touch electrode.
Q. Now, the TFE layer has a blue layer on top of it?
A. That's correct.
Q. And then a polarizer?
A. Correct.
Q. And 44 is the touch sensor?
A. Correct.
Q. Now, if you assume that the TFE layer is the substrate, do you have an opinion as to whether Chen anticipates?
A. If 84 is the substrate -- so the TFE is part of the display, so then it does not anticipate.

04:19:26 Q. If the TFE layer is part of the substrate, could 92
04:19:40 also be part of the substrate?
04:19:43 A. Correct.
04:19:45 Q. If 92 and 84 were the substrate and 44 is a touch
04:19:51 sensor on top of it, would that be a substrate with a touch
04:19:57 sensor?
04:19:57 A. Correct.
04:19:57 Q. And just to be clear, you referred, just in your
04:20:02 analysis, that 82 was the OLED display?
04:20:06 A. OLED. I said corresponds to the OLED, but that was in
04:20:11 the context of that particular portion of the report where
04:20:18 we were -- I was applying the Plaintiff's interpretation of
04:20:31 the claim.
04:20:31 Q. Okay. And by that, you were then referring to the R,
04:20:35 G, and B, and not including 84, the TFE layer as part -- as
04:20:42 part of the display?
04:20:42 A. I -- correct.
04:20:44 Q. And did you -- do you, with that understanding, have
04:20:50 any opinion one way or the other as to whether Chen does or
04:20:55 does not anticipate Claim 7 and 12 of the '311 patent?
04:21:00 A. Claim 7 anticipates.
04:21:04 Q. What --
04:21:07 A. Excuse me? Oh, sorry, I didn't hear your question.
04:21:10 Q. Well, I didn't hear your answer.
04:21:11 THE COURT: Well, then let's start over.

MR. HASLAM: Okay.
A. Can you repeat your --
Q. (By Mr. Haslam) If 82 is the OLED display, as you referred to it, and 84, the TFE layer, is not part of the display, do 84 through 92 and 44, the touch sensor, under that reading of this figure, does or does not Chen anticipate Claim 7 and 12 of the '311 patent?
A. He does not.
THE COURT: Next question.
A. He does. He does. I'm sorry, I misspoke. He does anticipate.
Q. (By Mr. Haslam) Why?
A. Can you repeat the question? I'm sorry.
Q. If 82 is the OLED display and the TFE layer 84 is not part of the display, which is one of the alternative opinions you rendered, correct?
A. Correct.
Q. And if 84, the glue 90 and 92, are considered a substrate and 44 is the touch sensor, under that reading of Chen, does it or does it not anticipate?
A. It does not.
THE COURT: All right. Let's move on.
A. Sorry, it does anticipate. I'm sorry.
THE COURT: Dr. Sierros, this is the --
THE WITNESS: I'm sorry, I was confused. I'm

sorry.

THE COURT: Well, this is the second time --

THE WITNESS: I'm sorry, I was confused about the question.

THE COURT: Well, there's been three attempts at this. You've answered it three different times. The last two times you answered it, you gave an answer, and then after a long pause, you said you misspoke.

THE WITNESS: I thought --

MR. HASLAM: Let the Judge finish.

THE COURT: Let me finish.

I do not want to hamper either side's part of this trial.

Mr. Haslam, we're going to make one more attempt at this back-and-forth on this question. And whatever the answer is, we're going to move on after this answer to this question one more time.

Ask the same question for the fourth time, and then we will get an answer. And then we will move on.

MR. HASLAM: Yes.

Q. (By Mr. Haslam) Okay. You said 82 is the -- in this is the OLED display, correct?

A. 82 --

MR. MIRZAIE: Your Honor, he's leading the witness.

THE COURT: I'm going to allow it.

Overruled.

Move on. Ask -- ask the question.

Q. (By Mr. Haslam) In your report, you referred to 82 --

A. You're referring to my report now? It wasn't clear.

Q. In your --

THE COURT: Wait a minute.

Dr. Sierros, do not speak until he finishes with this question. When he finishes, you should give your answer to this question as clearly as you can.

THE WITNESS: Okay. Okay.

THE COURT: If you do not understand his question, do not attempt to answer it. Tell him you do not understand it. If you understand it, answer it after he finishes it, and once that answer is given, we are going to move on.

Mr. Haslam, ask the question.

Q. (By Mr. Haslam) If 82 is the OLED display and 84 the TFE layer is not part of the display, but 84, 90, and 92 are the substrate for 44, does Chen anticipate or not?

A. Does not anticipate.

THE COURT: Now, let's move on. Next topic.

MR. HASLAM: I have already moved to that in my --

THE COURT: Then ask it.

MR. HASLAM: Okay. Can we have DTX-167?

04:26:38 Q. (By Mr. Haslam) Can you tell us what this document is?
04:26:40 A. This is a DDX document. The Patent No. is
04:26:50 2010/0045632.
04:26:51 Q. And when was this published?
04:26:54 A. It was published in February -- this patent
04:27:00 application, February 25, 2010.
04:27:05 Q. And who were the inventors on this patent?
04:27:08 A. Esat Yilmaz, Peter Sleeman, Samuel Brunet, Matthew
04:27:21 Trend, and Harald Philipp.
04:27:26 Q. And where were they located? Does it indicate?
04:27:29 A. They were at Atmel Corporation.
04:27:30 Q. And when was this application filed?
04:27:32 A. This application was filed April 10, 2009.
04:27:34 Q. And do you have an opinion in this case as to whether
04:27:41 or not Claims 7 and 12 of the '311 patent are obvious in
04:27:47 light of the Yilmaz reference and another reference to Joo?
04:27:51 A. They're obvious.
04:27:52 Q. Can you tell us what -- can you tell us what --
04:28:16 MR. HASLAM: No, take that down. Can we move on
04:28:24 to -- can we go to --
04:28:33 Q. (By Mr. Haslam) Can you tell us what the Yilmaz patent
04:28:36 discloses?
04:28:37 A. A capacitive touch sensor.
04:28:40 Q. And where does it describe that?
04:28:42 MR. HASLAM: Can we put the patent back up?

04:28:45 A. Capacitive position sensor.
04:28:58 MR. HASLAM: Can we put up DDX-5.064?
04:29:24 Q. (By Mr. Haslam) This is Claim 7?
04:29:25 A. Correct.
04:29:25 Q. Okay.
04:29:30 MR. HASLAM: Can we go to 5.065?
04:29:33 Q. (By Mr. Haslam) All right. I put up in the left-hand
04:29:35 corner the preamble, "device comprising." Does Yilmaz show
04:29:41 that?
04:29:41 A. Yes, it shows in Figure 1B a capacitive touchscreen as
04:29:50 the device.
04:29:51 Q. So that element you found?
04:29:52 A. Yes.
04:29:55 MR. HASLAM: Now, let's go to the substantially
04:29:57 flexible substrate.
04:29:58 Q. (By Mr. Haslam) Does Yilmaz show a substantially
04:30:02 flexible substrate?
04:30:02 A. Yes, Figure 1A we see in orange here the substrate,
04:30:09 flexible substrate, the substrate. And Yilmaz in
04:30:15 Paragraph 75 discusses about an deisolating substrate, and
04:30:23 it guess further to discuss that different panels relative
04:30:28 to an LCD placed below the touchscreen. So it's slightly
04:30:35 flexible.
04:30:35 Q. Does Figure -- does Claim 7 of the '311 patent apply
04:30:40 only to OLED displays?

04:30:42 A. It applies to -- this is -- this is -- excuse me, can
04:30:51 you -- can you repeat your question?
04:30:54 Q. Does Claim 7 of the '311 patent apply only to OLED
04:30:59 displays?
04:31:02 A. It doesn't require a display.
04:31:04 Q. Okay. I put up D -- DDX-5.068.
04:31:15 Does Yilmaz describe any particular substrate?
04:31:18 A. It discuss -- it discusses a PET, polyethylene
04:31:25 terephthalate, substrate.
04:31:26 Q. In 2009, was PET used for these kinds of applications
04:31:33 flexible?
04:31:33 A. We heard Mr. Yilmaz also during his deposition video
04:31:41 discussing about, and the '311 patent, I have an excerpt
04:31:49 here that discusses the PET substrate, similar.
04:31:55 MR. HASLAM: Okay. That's DDX-5.068.
04:31:59 Q. (By Mr. Haslam) So did you find a substantially
04:32:02 flexible substrate disclosed in Yilmaz?
04:32:03 A. Correct.
04:32:05 Q. Now, the next element is a touch sensor disposed on a
04:32:10 substantially flexible substrate, what is on this slide
04:32:14 DDX-5.070?
04:32:15 A. So we have the substrate and in the green here, we
04:32:20 see -- on top and bottom we see the touch sensor
04:32:24 electrodes. So the layers made of conductive material, and
04:32:32 on the substrate, on the PET substrate as discussed in

Yilmaz, Paragraph 75.

Q. What are we seeing on DDX-5.071?

A. On the -- this is the touch sensor that's required -- required -- this limitation requires a touch sensor disclosed on substantially flexible substrate, and we see the touch sensor 10 here and the substrate 40.

So the touch sensor is disclosed on the substantially flexible substrate. Here in Figure 12, we see the top view of the sensor.

Q. Can you please slow down a little?

And that is -- again, we're looking at DTX-0167, the Yilmaz patent?

A. Correct.

Q. What paragraphs are those?

A. Paragraph 119 to 120.

Q. Do you find the touch sensor disclosed on the substantially flexible substrate?

A. Correct.

Q. Element [c], the touch sensor comprising a plurality of capacitive nodes formed from drive or sense electrodes made of flexible conductive material configured to bend with the substantially flexible substrate.

I've put up Slide DDX-5.073, relating to this particular limitation.

What are we looking at on 5.073?

04:34:07 A. So we look at the -- it requires -- this limitation
04:34:11 requires the touch sensor comprising a plurality of
04:34:14 capacitive nodes from drive or sense electrodes made of
04:34:19 flexible conductive material configured to bend with
04:34:24 substantially flexible substrate.
04:34:25 This is a long limitation, so we start with the
04:34:29 touch sensor, as Yilmaz points out in Paragraph 1. This
04:34:35 invention lists capacitive position sensors, and those --
04:34:41 they have to comprise a plurality of capacitive nodes
04:34:47 formed from drive or sense electrodes.
04:34:49 And in Paragraph 130 of Yilmaz, it's disclosed
04:34:56 drive and sense electrodes forming nodes.
04:34:58 And we can continue to the next slide.
04:35:01 Q. What is -- you've referred several times to position
04:35:05 sensors. Does the Yilmaz reference describe what the
04:35:09 position sensor is?
04:35:10 A. It is a touch sensor.
04:35:15 Q. I put up DDX-5.074. What is the take-away from this
04:35:22 slide?
04:35:23 A. So here, we have the drive or sense electrodes, and we
04:35:32 see that the Yilmaz in Paragraph 155 explains the drive and
04:35:39 sense electrodes, as shown also in Figure 12 and 17. And
04:35:47 those are the 60 and 62. 60 is the drive electrodes, and
04:35:55 62 are the sense electrodes.
04:35:56 Q. I noticed it says in Paragraph 155, the drive and sense

04:36:03 electrodes shown in the figure are made up of thin wires or
04:36:07 a mesh of wire?
04:36:08 A. Correct.
04:36:08 Q. Instead of a continuous layer of electrode material?
04:36:12 A. Correct.
04:36:12 Q. We'll get to that later, I guess?
04:36:14 A. Yes. So this is -- continuing, the drive and sense
04:36:22 electrodes, and we see here on Paragraph 155 the wire
04:36:30 mesh -- the thin wires are made of -- thin wires or mesh
04:36:39 of wire instead of the continuous layer --
04:36:40 THE COURT: Dr. Sierros, you're going to have to
04:36:42 talk slower, please.
04:36:44 THE WITNESS: I'm sorry.
04:36:45 THE COURT: Please slow down.
04:36:46 Go ahead.
04:36:47 A. On Paragraph -- on Paragraph 155, Yilmaz describes the
04:36:53 drive and sense electrodes shown in the figure are made up
04:36:56 of thin wires or a mesh of wire instead of the -- and this
04:37:04 is an excerpt from the '311 patent.
04:37:07 Q. (By Mr. Haslam) What -- what metal is being used for
04:37:10 the wires or mesh?
04:37:11 A. The wires or mesh are manufactured from metal wires,
04:37:16 such as copper, but could also be gold or silver and
04:37:23 copper. And the '311 patent uses copper, too.
04:37:27 So this is exactly the same technology material.

Q. DDX-5.075, you put on the right-hand side, Line -- Column 7, Lines 44 through 47 from the '311 patent and compared it to the Yilmaz Paragraph 155.

THE COURT: Is that a question?

Q. (By Mr. Haslam) Is that right?

A. Yes, correct, I explained that.

Q. So did you find Element [c], the touch sensor comprising a plurality of capacitive nodes formed from drive or sense electrodes made of flexible conductive material configured to bend with the substantially flexible substrate?

A. Yes.

Q. The next one is the flexible conductive material of the drive or sense electrodes comprise a first and second conductive lines that electrically contact one another at an intersection to form a mesh grid?

MR. HASLAM: Let's look at DDX-5.077.

Q. (By Mr. Haslam) What are we looking at on this that relates to that particular claim limitation?

A. Yes. As we see on the top left box, the drive or sense electrodes comprise first and second conductive lines -- so the information here -- comprises first and second conductive lines that -- comprises first and second electrically contact one another at an intersection to form a mesh grid.

So as we see in Yilmaz Paragraph 22, it's made of the mesh or filigree pattern of the interconnected lines of highly conductive material. So this is satisfying --

Q. And in Paragraph 156, it states: It will be understood that the mesh or filligrane approach to forming each electrode out of a plurality of interconnected fine lines of connected -- fine lines of highly conducting wire or traces may be used for either Layer 1 or Layer 2 drive and sense?

A. Yes.

Q. What is being referred to there?

A. Drive and sense electrodes.

Q. And what is mesh or filligrane?

A. Mesh filligrane is similar, like that is the same as the mesh pattern, similar mesh pattern.

Q. So Claim Limitation [7d], the flexible conductive material of the drive or sense electrodes comprises first and second conductive lines that electrically contact one another at an intersection to form a mesh grid. Did you find that?

A. Yes.

Q. Okay. The next limitation is the substantially flexible substrate and the touch sensor are configured to wrap around one or more edges of a display. Did you find that in the Yilmaz reference?

04:40:28 A. Yes. So this is -- this is part of what a POSA will
04:40:39 understand to combine between Yilmaz and Joo in light of
04:40:47 Joo.
04:40:47 Q. What is the Joo reference?
04:40:49 A. The Joo reference is about -- so the Joo reference
04:40:58 discuss about the cover for a mobile device that one of the
04:41:04 characteristics is that there is a -- there's a sensor that
04:41:11 wraps distinct surfaces and the top surface and the side
04:41:17 surface. So there -- so display different information.
04:41:24 And in the -- on the side, the display can show
04:41:33 information. So instead of having, for example, mechanical
04:41:38 patterns of a display, you can just press the screen and
04:41:42 display the information.
04:41:43 So if Yilmaz satisfies all the claims, except this
04:41:51 claim that requires a substantially flexible substrate and
04:41:55 touch sensor configured to wrap around one or more edges of
04:41:59 a display, so if we take Yilmaz and we apply to Joo, then
04:42:06 we satisfy Claims 7 and 12.
04:42:11 MR. HASLAM: Can we look at DTX-169?
04:42:20 Q. (By Mr. Haslam) Okay. This is a patent -- it's a
04:42:23 cover for a mobile device and the mobile device having
04:42:26 same. Who is the inventor?
04:42:27 A. Joo.
04:42:28 Q. And is this prior art to the '311 patent?
04:42:31 A. It is prior art.

04:42:32 Q. When was this patent application -- this patent issued?
04:42:37 A. This was a patent application that was published in
04:42:42 September 18th, 2008.
04:42:44 Q. And as of that date, it became available to the public?
04:42:48 A. Correct.
04:42:49 Q. And it was filed in the Patent Office?
04:42:53 A. It was filed August 2007.
04:43:06 Q. Was the -- this was reference to Mr. Joo before the
04:43:11 Patent Office during prosecution of the '311?
04:43:14 A. No.
04:43:15 Q. What does Joo describe?
04:43:17 A. Joo describes a cover of --
04:43:23 MR. HASLAM: Can we go back to Joo? Can we go
04:43:26 to --
04:43:27 A. So if we go to Figure 4.
04:43:35 MR. HASLAM: Figure 4.
04:43:36 A. So we see in Figure 4, the cover -- we see the cover
04:43:43 32, and there's the -- that's a device -- that's a
04:43:49 particular device 34 that wraps around the side to form a
04:43:55 side surface 48.
04:43:57 Q. And what is -- what is 48?
04:44:05 A. 48 is side surface of the display.
04:44:13 Q. Did you prepare some slides that will assist you in
04:44:19 pointing out the elements in Joo that you find important?
04:44:22 A. Yes, so --

MR. HASLAM: Look at DDX-5.080.
Q. (By Mr. Haslam) What are we looking at here?
A. So this is for the Limitation [e] for Claim 7 --
THE COURT: Slow down, please. Please.
THE WITNESS: Yes, sir.
THE COURT: This is about the fourth or fifth time I've asked you. I really want to follow what you're saying, but I cannot do it if you're going to talk at this high rate of speed. Please slow down.
THE WITNESS: Yes, sir.
A. Substantially flexible substrate in a touch sensor configured to wrap around one or more edges of a display. So --
Q. (By Mr. Haslam) What are we looking at on the right-hand side of this -- you've got a figure from Joo 7 that you say is annotated and two paragraphs out of the Joo reference, Joo 0063 and Joo 0067. What is the significance of what you're depicting on this Slide DDX-5.080?
A. So if we see Joo Paragraph 63, and we see that the -- it discusses about the side display that displays information that is different than the information that is displayed on the upper display portion.
And, accordingly, Joo explains in Paragraph 67 that a separate key is not required to be mounted at the side surface of the terminal for generating input, thereby

simplifying the manufacturing process to reduce the manufacturing cost and make the enhanced appearance of the terminal.

So there's this feature is very important in this case. And --

Q. What is shown in the annotated Figure 7?

A. So the bottom part of here is the display so it's --

Q. What number is the display?

A. It's 110, and the side display portion is 112. And then we have a cover, and then 94 is the touch input portion. There's a top and a side that wraps around the touch input portion, and then we have the cover.

Q. So 94 in Figure 7 is the touch sensor?

A. Is the touch sensor, correct.

Q. And it goes along the top flat surface?

A. Yes.

Q. Bends around?

A. Yeah, bends around on the side surface here of -- of the side display portion.

Q. Does that -- does Figure 7 meet the Court's claim construction for wrapping around one or more edges of a display?

A. Correct.

Q. And just once more, point out why.

A. It means because we have a top surface here and it

wraps around an intersection, and then we have a separate and distinctive second surface. So this is in my view -- in my opinion satisfies the claim construction.

Q. And what is the significance of Joo in light of the Yilmaz reference?

A. So the significance of Joo here is the motivation of a person of ordinary skill in the art to take Yilmaz touch sensor that has -- that's satisfying all the other limitations and wrap it around the display. Because to enable this new feature for display information on the top, different information on the top and different information on the side.

Q. And does -- does Yilmaz -- I'm sorry, does Joo discuss at all what the benefits of having the display, as it's depicted in Figure 7, with the top portion bending around and then going down to a side portion 108?

A. Correct.

Q. And what did he say?

A. So in Paragraph 67, right down here: Accordingly, a separate side key is not required to be mounted at the side surface of the terminal for generating input.

So we don't need a mechanical button, for example.

Thereby simplifying the manufacturing process thus to reduce the manufacturing cost and make the enhanced appearance of the terminal.

Q. Why would a person of ordinary skill in the art at the time of the '311 invention have been motivated to combine the teaching of Joo with respect to the touch sensor on the substrate 96 that is depicted in Figure 7 and described on Slide 5.080 with the Yilmaz touch sensor as you've previously described it?

A. Because of this -- of this attribute, of this feature, of this new feature to display information on the side and on the top of the display. So the touch sensor would be wrapped around two distinct surfaces to display different information on the top and side.

And, in my opinion, this is -- this is -- this would motivate a person of ordinary skill in the art to perform this.

Q. If a person of ordinary skill in the art took the teaching of Joo and combined it with Yilmaz, would there be -- would that person have any reasonable expectation that the combination would be successful?

A. Yes.

Q. Why?

A. Because of the touch sensor from Yilmaz is -- it satisfies all the different claims. So they're all different limitations, the other limitations of this Claim 7. So it was configured to wrap around one or more edges of the display. This would be -- this, this is what

04:51:26 is missing.
04:51:29 Q. Does Joo have any -- talk about a particular way of
04:51:34 making the device that he describes?
04:51:36 A. Yes.
04:51:36 Q. Okay. And are you relying on the manufacturing process
04:51:42 of Joo in your obviousness opinion?
04:51:45 A. No. Here -- here the -- for obviousness, it's the
04:51:51 wrapping around one or more edges of the display that is --
04:51:58 that will motivate a person of ordinary skill in the art to
04:52:03 perform this. And it's to display the different
04:52:10 information on top and side, as I explained earlier.
04:52:14 Q. So you're not relying on the manufacturing methods?
04:52:19 A. No.
04:52:19 Q. Now, we've just gone through the substantially flexible
04:52:25 substrate and the touch sensor are configured to wrap
04:52:32 around one or more edges of a display.
04:52:35 And did you find that element in the Joo
04:52:43 reference?
04:52:43 A. Yes.
04:52:44 Q. And can you just summarize, again, your opinion as to
04:52:48 why you can combined Yilmaz and Joo to satisfy that
04:52:57 particular limitation, Preamble [E]?
04:53:02 A. Because Yilmaz satisfies all the previous limitations
04:53:07 of this claim and, combined in light of Joo, satisfies also
04:53:18 the fifth limitation.

04:53:19 Q. The last limitation is: One or more computer-readable
04:53:24 non-transitory storage media embodying logic that is
04:53:26 configured when executed to control the touch sensor.
04:53:28 Did you find that in -- where did you find that?
04:53:36 A. This is also satisfied by Yilmaz. And we see here -- I
04:53:43 believe I understand this has been construed between the
04:53:48 parties and was adopted by the Court at claim construction.
04:53:52 Q. And I've shown DDX-5.083?
04:53:57 MR. HASLAM: And if you put the Court's claim
04:53:59 construction up there for a computer-readable
04:54:02 non-transitory storage media.
04:54:04 A. Correct. So the claim construction is a tangible
04:54:11 computer-readable storage media to mean: A tangible
04:54:16 computer-readable storage media possession structure,
04:54:19 which, (1), maybe volatile, non-volatile, or a combination
04:54:24 of volatile and non-volatile, but, (2), may not be
04:54:28 propagating electrical or electromagnetic signal per se,
04:54:33 including, but not limited to, semiconductor-based
04:54:36 integrated circuits.
04:54:37 Q. Okay. And did you find a computer-readable
04:54:41 non-transitory storage media as the Court construed it in
04:54:44 Yilmaz?
04:54:44 A. Yes. A computer-readable -- the part of the -- of this
04:54:54 limitation that requires one or more computer-readable
04:54:58 non-transitory storage media is -- is in Yilmaz, it's the

controller.

And this requires embodying logic that's configured when executed to control the touch sensor. And here Yilmaz, in Paragraph 94, clearly states that the controller controls the operation of the drive and sense unit, which comprise the touch sensor.

And in general -- the last paragraph, to discuss: In general, the functionality of all these elements will be provided by a single integrated circuit chip, for example a suitably programmed general purpose microprocessor, or field programmable gate array, or an application specific integrated circuit, especially in microcontroller format.

And this is Element 20 in Figure 7B.

Q. So what was your opinion as to whether or not Claim Limitation [f], one or more computer-readable non-transitory storage media embodying logic that is configured when executed to control the touch sensor, was or was not found in Yilmaz?

A. It satisfies this limitation.

Q. So with the combination of Yilmaz and Joo, you believe all the elements of Claim 7 can be found in that combination?

A. This is correct.

Q. And this is an obviousness opinion, not an anticipation opinion?

04:56:39 A. This is obviousness because it combines two different
04:56:43 prior art.
04:56:44 Q. And have you given us your opinions on why one would be
04:56:48 motivated to combine those references?
04:56:51 A. Correct.
04:56:51 Q. Let's go to Claim 12: The device of Claim 12 [sic],
04:57:01 wherein the touch sensor further comprises
04:57:05 electrically-isolated structures made of conductive
04:57:07 material comprising a conductive mesh.
04:57:09 I've put up DDX-5.086. What is shown on this
04:57:21 slide?
04:57:21 A. So this claim, which is a dependent claim on Claim 7,
04:57:32 requires: The device of Claim 7, wherein the touch sensor
04:57:36 further comprises electrically-isolated structures made of
04:57:39 conductive material comprising a conductive mesh.
04:57:45 And here, Yilmaz, in Paragraph 22, discusses --
04:57:50 explains: In other embodiments, each drive and/or sense
04:57:55 electrode is made of a mesh or filigree pattern of
04:57:59 interconnected lines of highly conductive material.
04:58:03 And in Paragraph 155, it explains that "the
04:58:10 position sensor," which consists of the drive and sense
04:58:14 electrodes, "shown in the figure are made up of thin wires
04:58:18 or a mesh of wire."
04:58:20 Q. And they have to be electrically-isolated structures?
04:58:24 A. They have to be electrically-isolated structures, which

we show on the next slide.

And those in Figure 8A, we'll see the electrically-isolated structures. They're what's called diamond electrodes. And those are -- in Paragraph 98, these are infilling electrodes with isolated squares of conductor and are separated with gaps, and those isolated elements or islands -- they're also described as isolated elements or islands.

Q. So did you find: The device of Claim 7, wherein the touch sensor further comprises electrically-isolated structures made of conductive material comprising a metal mesh [sic] in Claim 12?

A. Satisfied.

Q. So have -- you've given us your opinions on non-infringement?

A. Correct.

Q. And you gave us one of your opinions on invalidity?

A. Correct.

MR. HASLAM: Before I pass the witness, I just want to read some exhibits that we went through that I apparently skipped. DTX-989, DDX-5.024, DTX-749, DTX-0719-0009, DTX-0732-0009, and DTX-0740-0010.

I pass the witness.

THE COURT: All right. Ladies and gentlemen, we've been in here over an hour and a half. We're going to

take a short recess, and then we'll continue with this witness, assuming Plaintiffs have cross-examination.

Please follow all the instructions I've given you about your conduct during the trial. Please leave your notebooks in your chairs. Don't discuss the case among each other, and we'll be back in here shortly.

I'll try to keep this as a short break, if possible. The jury is excused for recess at this time.

COURT SECURITY OFFICER: All rise.

(Jury out.)

THE COURT: The Court stands in recess.

(Recess.)

(Jury out.)

COURT SECURITY OFFICER: All rise.

THE COURT: Be seated, please.

Are Plaintiffs prepared to proceed with cross-examination of Dr. Sierros?

MR. MIRZAIE: Yes, Your Honor.

THE COURT: All right. Let's bring in the jury, please, Mr. Latham.

COURT SECURITY OFFICER: All rise.

(Jury in.)

THE COURT: Please be seated.

We'll proceed with the Plaintiff's cross-examination of the witness.

All right. Counsel, you may proceed.

MR. MIRZAIE: Thank you, Your Honor.

May I approach with the cross-examination binder for the witness?

THE COURT: You may. If you'll hand it to the Court Security Officer, please.

MR. MIRZAIE: Thank you.

THE COURT: He'll hand it to the witness.

All right. Let's proceed.

MR. MIRZAIE: Mr. Wietholter, can I have the slide presentation?

CROSS-EXAMINATION

BY MR. MIRZAIE:

Q. Good afternoon, Professor.

A. Good afternoon.

Q. We've met before, right? A few months ago, indeed, at your deposition that was videotaped?

A. Yes.

Q. A court reporter was there?

Now, Professor Sierros, on the question of infringement, the only correct comparison is between the accused products and the limitations under the Court's claim constructions, right?

A. Correct.

Q. And only expert witnesses can provide testimony on that

comparison, right?
A. Correct.
Q. And you are Samsung's only expert witness on the '311, right?
A. Correct.
Q. And so on the question of infringement and invalidity, the jury has to decide on infringement whether to go with your opinions or Mr. Credelle's, right?
A. Correct.
Q. Now, you were here for Mr. Credelle's testimony, right?
A. Correct.
Q. And I have a slide in front of you, Slide 16.
Do you see that slide, sir?
A. Yes.
Q. Now, Mr. Credelle, Solas's expert, says that the OLED display is -- comprises the layers below the TFE, correct?
A. This is what I understand from Mr. Credelle.
MR. MIRZAIE: And, actually, Your Honor, we may need to seal the courtroom for this.
THE COURT: All right. Are you requesting that I seal the courtroom?
MR. MIRZAIE: Yes.
THE COURT: All right. Then, based on counsel's request, I'll order the courtroom sealed and direct that anyone present who's not subject to the protective order in

this case should excuse themselves and remain outside the courtroom until it is reopened and unsealed.

(Courtroom sealed.)

(This portion of the transcript is sealed. and filed under separate cover as Sealed Portion No. 19.)

(Courtroom unsealed.)

THE COURT: All right. The courtroom is unsealed. Proceed with redirect.

MR. HASLAM: Can we put up DDX-5-038? DDX-5.038.

REDIRECT EXAMINATION

BY MR. HASLAM:

Q. Now, I put up Figure 21, which you were shown on cross-examination. And this is -- you put on the right-hand side what --

MR. MIRZAIE: Your Honor?

THE COURT: Just a minute.

Yes, counsel.

MR. MIRZAIE: Yeah, I did not show this figure on cross-examination.

THE COURT: Your objection is overruled.

MR. MIRZAIE: Okay.

THE COURT: The door to this has been opened.

Go ahead, counsel.

Q. (By Mr. Haslam) And you were asked about Display 14 by

Mr. Mirzaie, correct?
A. Right.
Q. And on this slide you've annotated on the right-hand side, is that your notation -- it is your notation. Is that what was described in the Chen reference?
A. The letters are mine. The numbers are in the patent.
Q. And have you labeled the numbered layers the way Chen refers to them?
A. Correct.
Q. So it refers to a substrate, an OLED layer, a TFE layer, an adhesive, a polarizer, a touch sensor, an adhesive, and a cover glass. And that's what Chen refers to as a display, correct?
A. That's correct.
MR. MIRZAIE: Your Honor, it's leading.
THE COURT: Restate the question, counsel.
Q. (By Mr. Haslam) What does Chen call No. 14 in the patent?
A. A display.
Q. Now, in Chen --
MR. HASLAM: If you can pull up Exhibit DTX-0163. If we go to Column 1, Line 42.
Q. (By Mr. Haslam) This paragraph reads: The Organic Light-Emitting Diodes may be encapsulated with a thin-film encapsulation layer. A touch sensor may be formed from

capacitive touch electrodes. The electrodes may be formed on thin-film encapsulation layer, on one or more sides of a polarizer, or on a touch sensor panel substrate in a single-sided or double-sided touch sensor -- touch sensor.

Your opinions -- were your opinions based on one of these three embodiments?

A. Correct.

Q. Which one?

A. The Organic Light-Emitting Diodes may be encapsulated with a thin-film encapsulation layer. So that's --

Q. There are -- go ahead.

A. This is for encapsulating the LEDs. And a touch sensor may be formed -- and electrodes may be -- and the electrodes may be formed on a thin-film encapsulation layer --

THE COURT: Slow down. Slow down, please.

A. -- and the second one is the electrodes may be formed on the thin-film encapsulation layer on one or more sides of the polarizer.

Q. (By Mr. Haslam) It says it can be formed on the thin-film encapsulation layer or on one or more sides of a polarizer or on a touch panel substrate in a single-sided or double-sided touch sensor panel.

Were your opinions on Chen based on one of those particular descriptions?

A. They were -- so the way that this structure works is you have the display that is formed -- the polarizer is formed on a -- separately from the display. This is how it's explained by Chen. And a thin-film encapsulation layer is needed to encapsulate the display.

MR. HASLAM: Can we go back to Figure 21? I'm sorry, Slide DDX-5-038.

Q. (By Mr. Haslam) There is a polarizer?

A. Correct.

Q. And a touch sensor on it, correct?

A. Correct.

Q. Does Chen talk about that particular aspect of the -- of his invention, the polarizer and touch sensor?

A. He -- it describes how it's formed, how the electrodes are formed on the polarizer separately from the display.

Q. And how does it -- how does Chen talk about how the polarizer and touch sensor is attached to the display?

A. It's using adhesive.

Q. So is the -- is the touch sensor and polarizer, as depicted in Chen Figure 21, an external touch sensor?

A. It is separate from the bottom three layers that form the display.

Q. And it is glued against the display?

A. Yes, it is glued using adhesive.

Q. And is the polarizer in Chen a flexible substrate?

A. It is -- the polarizer is -- it's made of a plastic carrier and may be other -- may be other plastic film, but it's a plastic carrier.
Q. Is it flexible?
A. According to my knowledge, it's flexible.
Q. And does Chen have -- does the touch sensor have drive and sense electrodes?
A. It does have mesh electrodes.
Q. And does it have metal mesh?
A. Yes.
MR. HASLAM: And can we put up Claim 7 side-by-side with this display?
Q. (By Mr. Haslam) Does Chen have a device?
A. It has a device.
Q. And what is the device?
A. The device is a mobile phone.
Q. Does it have a touch sensor disposed on a flexible -- substantially flexible substrate --
A. This is the polarizer.
THE COURT: Let him finish the question, please --
THE WITNESS: Oh, I'm sorry.
THE COURT: -- Dr. Sierros.
THE WITNESS: I'm sorry.
THE COURT: Ask your question, Mr. Haslam.
Q. (By Mr. Haslam) The touch sensor is disposed on the

polarizer?
A. Correct.
Q. And that's -- is that substantially flexible?
A. It's a plastic carrier --
Q. Is it substantially flexible?
A. It is, it is, yes.
Q. The touch sensor comprising a plurality of capacitive nodes formed from drive and sense electrodes made of flexible conductive -- conductive material configured to bend with a substantially flexible substrate. Does Chen disclose that?
A. It does.
Q. And does -- are the flexible conductive material of the drive or sense electrodes comprised first and second conductive lines that electrically contact one another at an intersection to form a mesh grid?
A. Correct.
Q. Does it disclose that?
A. It does disclose it.
Q. And is that in the touch sensor electrodes 44?
A. This is the 44, the green layer.
Q. And is the -- does Chen disclose that the substantially flexible substrate and the touch sensor are configured to wrap around one or more edges of a display?
A. Yes.

06:14:42 Q. And does Chen show that?
06:14:45 A. Yes, Figure 34.
06:14:55 MR. HASLAM: Can we show Figure 24?
06:14:57 THE WITNESS: 34.
06:14:58 MR. HASLAM: 34. Can we show Figure 34?
06:15:03 Q. (By Mr. Haslam) And there we see Figure -- we see the
06:15:06 No. 14. That's -- is that the same display?
06:15:09 A. It's on -- this is the same as this layer that wraps
06:15:14 around the side here. And, again, is for enabling the
06:15:22 original patents instead of having mechanical patents.
06:15:24 Q. And so in this Figure 34, among other things, the
06:15:31 display wraps -- goes from the top surface around a curve
06:15:37 and down a side surface, correct?
06:15:41 A. Correct.
06:15:42 Q. And, actually, what is SW?
06:15:43 A. SW, it's sidewall. It's for sidewall.
06:15:49 Q. So it goes from the top around to the sidewall?
06:15:55 A. Correct.
06:15:55 Q. And does the -- 14 includes the polarizer and the touch
06:15:59 sensor electrodes?
06:15:59 A. It includes the -- yeah.
06:16:02 Q. And does the polarizer and the touch sensor go from the
06:16:10 top surface around the corner down on the sidewall?
06:16:13 A. Correct.
06:16:14 Q. And does that show one or more intersections of two or

more surfaces?
A. Correct.
Q. And what is the intersection?
A. The intersection is the surface between.
Q. Between --
A. Between -- between the side and the top surface.
Q. And does Chen show one or more computer-readable non-transitory storage media embodying logic that is configured when executed to control the touch sensor?
A. Yes.
Q. And is --
MR. HASLAM: Can we go back to the slides? DDX-5.038. Can you advance it? My clicker is not working. Okay. It's not working. Can you just advance it, please? Okay. Go -- it's gone.
Can you go back to DDX-5.038? Right here.
Q. (By Mr. Haslam) We saw the substantially flexible substrate. Is this a touch sensor disposed on the substantially flexible substrate? If you go to the next slide.
A. Yes.
MR. HASLAM: Go to the next slide.
Q. (By Mr. Haslam) There's a touch sensor comprising a plurality of capacitive nodes Element --
THE COURT: Slow down, Mr. Haslam. It's been a

long day. If you're going to read, you're going to have to read it at a normal pace so the court reporter can take it down.

MR. HASLAM: I apologize to the court reporter and to the Court and to the jury.

THE COURT: All right. Let's go forward.

Q. (By Mr. Haslam) Element [1c] is: The touch sensor comprising a plurality of capacitive nodes formed from drive or sense electrodes made of flexible conductive material configured to bend with a substantially flexible substrate.

Did you find that in Chen?

A. Yes.

MR. HASLAM: Can we go to the next slide?

Q. (By Mr. Haslam) What is being --

MR. HASLAM: Just the next slide, please? Can we go back a slide?

THE WITNESS: No, the previous one.

A. Yes.

Q. (By Mr. Haslam) [7c] is up here. You got Chen Figure 5 and something in Chen. What is being described here?

A. The drive and sense electrodes, that they form nodes where the drive and sense electrodes aligns here. These are the nodes.

06:19:34 Q. And those are -- in Chen, they're on the polarizer, the
06:19:41 plastic substrate?
06:19:41 A. The touch sensor is on top of the polarizer.
06:19:48 MR. HASLAM: Go to the next slide. Okay.
06:20:00 Q. (By Mr. Haslam) Let's go to the next [1d]: The
06:20:05 flexible conductive material of the drive and sense
06:20:07 electrodes comprises first and second conductive lines that
06:20:10 electrically contact one another at an intersection to form
06:20:14 a mesh grid."
06:20:15 Did you find that?
06:20:16 A. Yes.
06:20:17 MR. HASLAM: Can we see the next slide?
06:20:19 Can we go back one? There.
06:20:22 A. These are the drive electrodes, these are the sense
06:20:25 electrodes, and these are the grades that they're forming
06:20:33 first and second lines, that they intersect directly with
06:20:38 one another, intersect to form the mesh.
06:20:41 Q. (By Mr. Haslam) And in Column 8, Lines 49 to 52, what
06:20:45 does Chen say?
06:20:47 A. Forming drive lines and sense lines may be formed from
06:20:52 a series of horizontally and vertically linked mesh (grid)
06:20:58 structures.
06:20:58 MR. HASLAM: Can we go to the next slide?
06:21:01 Q. (By Mr. Haslam) The next one is: A substantially
06:21:03 flexible substrate and the touch sensor are configured to

wrap around one or more edges of a display.

Did you find that in Chen?

A. Yes.

MR. HASLAM: Can we have the next slide?

Q. (By Mr. Haslam) This is the Court's construction. I think we've all seen that.

MR. HASLAM: Can we have the next slide?

A. This is the figure we were just discussing.

THE COURT: Just a minute. You don't need to start talking, Dr. Sierros, until Mr. Haslam has asked you a question.

THE WITNESS: I'm sorry.

THE COURT: And you need to let him ask a complete question, and when he's finished, then you can give the answer that that question calls for.

Now, between Mr. Haslam giving verbal instructions to the IT person and you talking before he's asked a question, the record is going to be, I'm afraid, irrevocably confused.

Now, we're going to do this the right way. I know everybody's tired, I know it's been a long day, but we're going to finish this witness, and we're going to do it the right way.

If you can give your instructions in a less audible way so that they become part of the record, you

need to be aware everything you say is a part of the record.

And if you will wait until the question has been asked and then answer the question, I'll be happier.

All right?

Q. (By Mr. Haslam) We've got Slide DDX-055. We've seen the figure. What is the description -- the two descriptions from Chen, 13, 23 to 27, and Chen, 13, 42 to 46, what, if anything, do they say about this particular description?

A. On-screen options such as virtual button may be presented in active portion A' of active region A that folded over to cover sidewall SW.

So it's forming virtual buttons.

And at Column 13, 23 to 27, the structure -- display 14 has been folded over the side of the housing structure. So it continues to wrap around one or more intersection between two or more surfaces of a display.

MR. HASLAM: Can we have the next slide?

Q. (By Mr. Haslam) Limitation [f] of Claim 7 is: One or more computer-readable non-transitory storage media embodying logic that is configured when executed to control the touch sensor.

Now, without reading the claim limitation again on the next slide, can you tell us what, if anything, on this

slide does or does not, in your view, meet the claim limitation?

A. (No answer.)

Q. And we put up, again, on DDX-057, the Court's claim construction. It's in the upper right-hand corner.

On DDX-5.058, what on here, if anything, does or does not support your opinion that the one or more computer-readable -- the last limitation, [7f], is met or not met in Chen?

A. It is met by Chen. It requires: Volatile or non-volatile, or a combination of volatile and non-volatile --

THE COURT: Slow down, please.

THE WITNESS: I'm sorry.

A. So Chen discloses that storage and processing circuitry 28 may include volatile and non-volatile memory and solid state drives. And as we see from the claim construction, these are described in claim construction, semiconductor-based integrated circuits, for example.

And then: The storage and processing circuitry may handle tasks associated with displaying images for a user, processing touch commands...

Q. (By Mr. Haslam) Did you or did you not find that particular claim limitation in Chen?

A. Yes, it satisfies the claim.

MR. HASLAM: Can we go to the next slide, please?
Q. (By Mr. Haslam) You found in Chen, as you've just pointed out, all of the elements of Claim 7 of the '311 patent?
A. Correct.
MR. HASLAM: Go to the next slide.
Q. (By Mr. Haslam) The device -- this is Claim 12: The device of Claim 7, wherein the touch sensor further comprises electrically-isolated structures made of conductive material comprising a conductive mesh.
Did you find that or not find that in Chen?
A. It was in Chen.
MR. HASLAM: Can we have the next slide?
Q. (By Mr. Haslam) Can you explain what's depicted on this slide?
A. The device of Claim 7, wherein the touch sensor further comprises electrically-isolated structures made of conductive material comprising a conductive mesh.
So these are conductive mesh here, and they're electrically-isolated, the drive and sense electrodes.
Then with this structure here, which is like a bridge, I would say, to maintain isolation, it's described in the sentence structures 46 and 48.
And, also, the diamond-shaped mesh electrodes are discussed and the drive and sense electrodes. The yellow,

drive electrodes; and the brown, sense electrodes.
Q. Now, on DDX-5-061, on the figure on the right, you have two yellow squares and two brown squares. Are those electrically -- all electrically connected?
A. The sense and the drive are connected. But the drive electrodes and the sense electrodes, they're electrically isolated.
Q. So did you find the elements of Claim 12 in Chen?
A. Correct.
MR. HASLAM: No further questions.
THE COURT: You pass the witness?
MR. HASLAM: Pass the witness.
MR. MIRZAIE: Your Honor, just three or four questions, and I'll get out of here.
THE COURT: All right. Additional cross-examination.
MR. MIRZAIE: Mr. Wietholter, can we have cross-examination Slide 21?

RECROSS-EXAMINATION

BY MR. MIRZAIE:
Q. I just wanted to clear up one thing, Professor Sierros. As you testified earlier today, you've never provided any rebuttal to any of the conception or reduction to practice evidence from the inventors in this case, any of the facts you see on this slide? You never provided a written

06:27:55 rebuttal to that, correct?
06:28:01 A. I don't -- I don't recall, no.
06:28:11 Q. And the invention date or conception date listed here
06:28:15 is January 2011, correct?
06:28:16 A. This is --
06:28:19 Q. Did I read --
06:28:20 A. -- what is claimed, yes.
06:28:23 Q. And Chen's invention date, as shown on your own slides,
06:28:28 over six months later, in July 19, 2011, correct?
06:28:32 A. Correct.
06:28:32 MR. MIRZAIE: No further questions, Your Honor.
06:28:34 THE COURT: Further redirect?
06:28:38 MR. HASLAM: No, no more redirect.
06:28:42 THE COURT: All right. Dr. Sierros, you may step
06:28:44 down.
06:28:49 Ladies and gentlemen, I'm going to recess for the
06:29:02 day. I'm going to ask you to leave your notebooks closed
06:29:04 on the table in the jury room as you exit the courthouse.
06:29:08 Please follow all the instructions that I've given
06:29:10 you about your conduct over the course of the trial,
06:29:13 including, of course, not to discuss this case or anything
06:29:15 about it with anyone, including the eight -- the seven of
06:29:20 you.
06:29:21 Please travel safely. Please be back tomorrow so
06:29:25 we can start at 8:30. I appreciate your punctuality

throughout the trial. Travel safely to your homes, and we will see you tomorrow. The jury is excused at this time.

COURT SECURITY OFFICER: All rise.

(Jury out.)

THE COURT: Counsel, the Plaintiff has 1 hour and 26 minutes remaining, and the Defendant 1 hour and 55 minutes remaining.

Is there anything that needs to be raised with the Court before we recess for the evening?

MR. MIRZAIE: No, Your Honor.

MR. HASLAM: No, Your Honor.

THE COURT: All right. I'll expect your continued improvement in the area of meeting and conferring overnight. I understand you're continuing to work jointly with regard to the proposed charge and verdict form. I instruct you to continue those efforts. Hopefully, they will narrow any problems or issues we'll have to address after the evidence is complete.

I'll be in chambers by 7:30 if there are issues that need to be taken up with me before I bring the jury in tomorrow.

And with that, counsel, we stand in recess until tomorrow morning.

(Recess.)

CERTIFICATION

I HEREBY CERTIFY that the foregoing is a true and correct transcript from the stenographic notes of the proceedings in the above-entitled matter to the best of my ability.

/S/ Shelly Holmes 3/4/2021
SHELLY HOLMES, CSR, TCRR Date
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